



HAM RADIO OUTLET

WORLDWIDE DISTRIBUTION

System Fusion

Joining digital and conventional FM communication into a single multiple function system.



FT1DR **C4FM**
Digital C4FM Voice
Clear and Crisp Voice Technology
C4FM 144/430 MHz Dual Band
5 W Digital/FM Transceiver
Read more on page 60



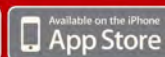
FTM-400DR **C4FM**
Digital C4FM Voice
Clear and Crisp Voice Technology
C4FM 144/430 MHz Dual Band
50 W Digital/FM Transceiver
Read more on page 61



DR-1 **C4FM**
Digital C4FM Voice
Clear and Crisp Voice Technology
144/430 MHz Dual Band C4FM/FM Digital Repeater
Read more on page 59



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DIGITAL

ALINCO®

Quality. Style. Performance!



440MHz FM MOBILE TRANSCEIVER
DR-435TMkIII

220MHz FM MOBILE TRANSCEIVER
DR-235TMkIII

144MHz FM MOBILE TRANSCEIVER
DR-135TMkIII

50MHz FM MOBILE TRANSCEIVER
DR-06T

29MHz FM MOBILE TRANSCEIVER
DR-03T
(Digital mode not supported.)



144/440MHz FM FULL-DUPLEX MOBILE TRANSCEIVER
DR-635T

HF 100W SSB/CW/FM/AM
DESK-TOP TRANSCEIVER
DX-SR8T
DX-SR9T NEW



SSB/AM/FM/CW and I/Q
LW/MW/SW 150KHz to 30MHz
DESK-TOP RECEIVER
DX-R8T

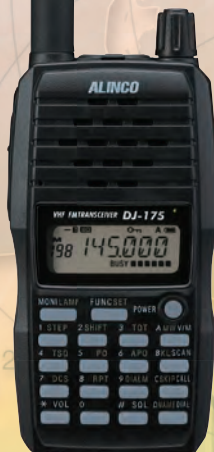
Alinco is proud to announce that REMTronix is now our authorized importer for U.S.A, Canada and Mexico.
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144/440MHz FM
HANDHELD TRANSCEIVER
DJ-V57T

440MHz FM HANDHELD TRANSCEIVER
DJ-V47T

222MHz FM HANDHELD TRANSCEIVER
DJ-V27T

144MHz FM HANDHELD TRANSCEIVER
DJ-V17T



144MHz FM
HANDHELD TRANSCEIVER
DJ-175T

144/440MHz FM DUAL
HANDHELD TRANSCEIVER
DJ-C7T



222/902MHz FM FULL-DUPLEX
HANDHELD TRANSCEIVER
DJ-G29T



144/440/1200MHz FM FULL-DUPLEX
HANDHELD TRANSCEIVER
DJ-G7T



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Dual Band

Dual Band 222 / 902 MHz

DJ-G29T
\$Call – HRO Price

This ground-breaking dual band transceiver operates on the 222 and 902 MHz amateur bands. Up to 5 W out on 222 MHz and 2.5 W on 902 MHz. Rugged unit with IPX7 standards. Spectrum display, backlit display, A/N keypad, internal VOX.



Rugged, pocket-sized 2m / 70cm

DJ-V57T

\$Call – HRO Discount Price

Small size fits in the palm of the hand. 144 / 440 MHz dualband transceiver. Three power levels with high of 5 W. Water resistant body made of polycarbonate. Direct keypad input. Alphanumeric display. 39 CTCSS tone (encode + decode) and 104 DCS. 200 memories. Tone burst function.



Single Band HTs

DJ-175 - 2 m
\$Call – HRO Price

The DJ-175 is an economical 2m HT with an alphanumeric display, direct frequency input, 200 memories plus 1 call channel, 39 CTCSS tone squelch (encode/decode) wire cloning capability, 3 levels of output (5 / 2 / 0.5 W), DTMF encoding.



DJ-V17T - 2 m
DJ-V27T - 220 MHz

DJ-V47T - 70cm
\$Call – HRO Prices

These HT's are compact full-powered FM HT's that are submersible 3 ft for 30 minutes. They are perfect for outdoor activities. Direct frequency input from keypad. 200 memories plus one call channel. 39 CTCSS encode-decode settings. Digital coded squelch.



Alinco Handheld Specifications

Model	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out **	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DJ-175T	2m / 70 cm	3-7.6VDC	320 mA	70 mA	300 mW *	200	50	2k	<15 µV	3.7	2.2	0.57	0.23
DJ-G29T	220 / 902 MHz	7.4 VDC	1.7 A	200 mA	5 W #	500	50	2k	<15 µV	4.17	2.4	1.49	0.65
DJ-G7T	2m/70 cm 1240-1299.995	7.4 VDC	1.6 A	200mA	5 W †	1000	50	2k	<15 µV	4.53	2.36	1.18	0.6
DJ-V17T	144-147.995MHz	7.2 VDC	1.4 A	250 mA	5 W	200	50	2k	<2 µV	4.33	2.28	1.43	0.61
DJ-V27T	222-224.995MHz	7.2 VDC	1.4 A	251 mA	6 W	200	50	2k	<2 µV	4.33	2.28	1.43	0.61
DJ-V47T	420-449.995 MHz	7.2 VDC	1.7 A	250 mA	4.5 W	200	50	2k	<25 µV	4.33	2.28	1.43	0.61

** Power output is determined by choice of battery pack.

† at 13.8VDC

* 500mW with 6 VDC #5W 220, 2.5 912MHz.

Tri-Band

2 m / 70cm / 1.2 GHz DJ-G7T

\$Call – HRO Price



The DJ-G7T tunes 0.531-1300 MHz* continuously. Full duplex receive with 144 / 430 / 1200 MHz bands. AM and WFM modes allow you to hear aviation and broadcast bands. Scan modes and options include 50 pair of programmable scan memories. Timing adjustable priority scanning and Alinco's Channel-Scope – visualize the presence of radio signals on the display. Output power up to 5 Watts on 2 m.

*Cell band blocked.

Receiver

Wide Band Receiver DJ-X11T

\$Call – HRO Price

Get the power of a desktop in a handheld!! It features: 2 VFO simultaneous receive; covers 0.05 to 1299.995 MHz* in all modes; 1200 memories; sub-band coverage VHF 118-171 MHz and 336 to 470 MHz in AM / NFM; IQ signal can be used with 3rd party software and discriminator output; easy-to-use twin dials; selectable tuning steps; 3 selectable scan speeds; freeware to operate as a software defined radio.

*Cell band blocked.



Power Supplies

Communications Grade Switching Power Supply

DM-330MVT



Compact, lightweight power supply for portable operations. Provides 32 amps peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit removes pulse noise. Short circuit protection. Front panel connections. Internal switch to convert voltage to 220V. Cigarette plug socket. **HRO Price \$Call**

**Extended Warranties
available for Alinco**

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ALINCO®

BASE / MOBILE RADIOS

Desktop Transceivers

All-Mode TRANSCEIVER Analog / Digital Hybrid

DX-SR9T – \$Call

150 kHz - 30 MHz



This hybrid, stand-alone analog and digital SDR transceiver covers all short-wave and HF amateur bands allocated to North America. Covers 160 m to 10 m amateur bands including 5.3 MHz in SSB, CW, AM, FM and IQ output modes. Output power is 100W SSB/CW and FM, 40 W in AM with low and super-low power settings for QRP operation. In addition, the general coverage receiver covers 135 KHz to 30 MHz in all modes.

Features include:

- Front panel separation
- Large LCD display.
- Front facing speaker.
- Auto-keyer.
- Simple operating commands.
- Download free SDR software from Alinco.com. Programming cable ERW-4C or ERW-7 required for SDR operation.

All Mode TRANSCEIVER

DX-SR8T – \$Call

**150 kHz - 30 MHz
SSB / CW / AM / FM**

The DX-SR8T covers 160 m to 10 m amateur bands including 5.3 MHz in SSB, CW, AM and FM modes. Output power is 100 W SSB / CW / FM and 40 W in AM with low and super-low power settings for QRP operation. General coverage receiver of all modes 135 kHz to 30 MHz. Receiver features are similar to the DX-R8T.

Desktop Receiver



All Mode RECEIVER

DX-R8T – \$Call

**150 kHz - 30 MHz
SSB / CW / AM / FM / IQ**

Monitor SWL signals from aviation, navigation and data sources.

- IQ signal output allows use of third-party SDR software.
- Front and rear jacks.
- Direct frequency input to the dual VFO system.
- Detachable front control panel mounting options.
- Large LCD display.
- Front speaker and 2W audio output.
- Rugged die cast chassis.
- Narrow ceramic filters (AM 2.4 kHz, SSB 1 kHz) and 0.5 kHz audio filtering for CW.
- 4-level RF amp / attenuator.
- IF shift and RIT.
- Noise blanker.
- 3 banks / 600 memory channels.
- Two sets of programmed search pairs and varieties of scanning modes.
- Auto power off, sleep timer, dial and key locks, RX indicator illumination.
- Computer utility software to manage settings and edit memories.
- Receive circuitry: Double conversion superheterodyne.
- Receiver current drain: 1.0 A.
- RIT range: ± 1.2 kHz.
- IF Frequency: 1st 71.75 MHz, 2nd 455 kHz.
- Spurious and image rejection ratio: more than 70 dB.
- Antenna impedance: 50 ohm unbalanced.
- Frequency stability: ± 1 ppm.
- Power required: 13.8 VDC $\pm 15\%$.

EDS-17

Front panel remote kit optional. 5 m cable, front panel bracket, unit cover and hardware.

Single Band Mobiles



DR-435TMKIII

440 MHz

DR-235TMKIII

220 MHz

\$Call – HRO Prices

Features a unique multifunction backlit microphone with direct frequency input. The 144 MHz, 220 MHz, and 440 MHz models accept optional EJ-41U internal TNC or EJ-47U digital voice module. The MKIII TCXO supports a specification of ± 2.5 ppm frequency stability.



DR-135TMKIII

2 Meters

\$Call – HRO Price

2 meter FM and receive Airband (AM). Ignition key power control, theft alarm, 7 place alphanumeric display, front panel data input, optional internal packet module to use with APRS®, rear panel serial port connection. 100 memories, 10 autodial memories.



DR-06T 6 Meters

DR-03T 10 Meters

\$Call – HRO Prices

Catch the exciting world of the 6 m and 10 m bands. The DR-06T covers 50-53.995 MHz and the DR-03T, 28-29.695 MHz. Output on 6 m is 50 W and 10 m is 10 W. Both radios have convenient scan features, a variety of selective calling tones, theft alarm, ignition key on/off, direct frequency input and controls from the EMS57 key pad microphone.

Dual-Band Mobile



Dual Band

DR-635T
– \$Call

**2 m / 440
MHz**

This mobile / base VHF+UHF transceiver has an expanded range receiver.

- VHF output: 50 / 25 / 5 W; UHF 35 / 20 / 5 W.
- 200 memories.
- Cross-band repeater functions.
- Large, 6 character alphanumeric display with selectable color illumination.
- Removable control head.
- Internal duplexer.

- CTCSS and DCS encode / decode plus four tone bursts.
- CTCSS tone and DCS scan.
- Optional 1200/9600 bps packet (EJ-50U).
- Programmable VFO and memory scan modes.
- Air band reception.
- Receive frequencies: 87.5-107.995, 108-173.995, 335-479.995 MHz.

**Extended Warranties available
for Alinco Radios**

Alinco Mobile Specifications

Model	Primary Use	Frequency Range	Power	Current Drain Xmit	Current Drain Rec	Power Out	Memory Channels	Ant Z ohms	Mike Z ohms	Sensitivity at 12 dB	Height in	Width in	Depth in	Weight lbs
DR-135TMKIII#	Mobile	2 m	13.8 VDC	11 A	400 mA	5/10/50 W	100	50	600	<16 μ V	1.57	5.58	6.83	2.2
DR-235TMKIII#	Mobile	222-225 MHz	13.8 VDC	8 A	400 mA	5/10/25 W	100	50	600	<16 μ V	1.57	5.58	6.83	2.2
DR-435TMKIII#	Mobile	430-450 MHz	13.8 VDC	10 A	400 mA	5/10/35 W	100	50	600	<16 μ V	1.57	5.58	6.83	2.2
DR-03T	Mobile	28-29.695 MHz	13.8 VDC	11 A	600 mA	10 W	100	50	600	<25 μ V	1.57	5.58	6.83	2.2
DR-06T	Mobile	54-53.995 MHz	13.8 VDC	11 A	600 mA	50 W	100	50	600	<25 μ V	1.57	5.58	6.83	2.2
DR-635T	Mobile	2m/70 cm	13.8 VDC	11 A	1.2 A	50 W/35 W	50	50	600	<16 μ V	1.6	5.6	7	2.43

* Expand to 100 with optional EJ-19U †Expand to 240 with optional EJ-23U #TCXO with ± 2.5 ppm frequency stability.



IC-7600

The Flagship's Lineage

The IC-7600 pushes performance to the pinnacle with the latest DSP technologies developed for the IC-7800 / 7700. More than 45 years of analog circuit expertise give the IC-7600 the performance advantage. Supplied with DC power cable, HM-36 hand mic, spare fuses, MB-121 handle, and CW key plug.

- Dual DSP units for transmitter / receiver and high resolution real time spectrum scope.
- 2-100 W output with 1-30 W on AM and a built-in high speed automatic antenna tuner.
- Receives 0.3 - 60 MHz.
- Transmits on amateur HF frequencies plus 6 meters.
- Three built-in 1st IF (roofing) filters: 3, 6, and 15 kHz.
- 5.8 inch WQVGA (400 x 240 pixel) TFT display with long-life LED backlighting.
- Front & rear USB connectors for keyboards, flash memory drives and PCs.
- Built-in PSK and RTTY operation with a USB keyboard. APC is not required.
- 104 dB dynamic range and +30 dBm third-order intercept point.
- Double conversion superheterodyne receiver dramatically improves inband IMD.
- Dual AGC loops (one analog and one digital) controlled by the DSP.
- Adjustable digital IF filter.
- 99 memories and 2 scan edges.
- Noise reduction / noise blanker.
- Digital notch filter.
- Digital twin PBT to shift and narrow the IF passband to eliminate interference.
- Dual watch function allows simultaneous reception of two signals in the same band.
- High stability TCXO unit with ± 0.5 ppm frequency stability.
- Digital voice memory to record and replay incoming signals.
- 4-channel transmit memory and 20-channel receive memory.
- Multi-function meter.
- RF speech compressor.
- Triple band stacking register.
- Programmable band edge beep.
- Built-in memory keyer.
- Microphone equalizer and adjustable transmit bandwidth.
- Two TX / RX antenna connectors with automatic antenna selector.
- Built-in 3-step attenuator and two types of RX preamps.
- 50 CTCSS tone encoder and VOX.
- RIT and delta TX variable up to ± 9.999 kHz.

HRO Offers Extended Warranties for Icom Radios. See Page 27.

Icom HF Specifications

Model	Receive Freq Range	Power Supply	Current Drain Xmit	AM	FM	SSB	CW	FSK	Mike Z ohms	Receive Circuitry	Sensitivity 1.8-30 MHz	RIT / XIT Range	Notch	Audio
IC-7000	300 kHz - 199.9999 MHz, 400 - 470 MHz	13.8 VDC	22A	1-40W	###	###	###	###	600	Triple Conversion	<18 μ v at 10 dB	± 9.9 kHz	Man + auto	>2.0 W
IC-7100	301 kHz - 199.9999 MHz, 400 - 470 MHz	13.8 VDC	22A	1-40W	###	###	###	###	600	Triple Conversion	<18 μ v at 10 dB	± 9.9 kHz	Man + auto	>2.0 W
IC-7200	300 kHz - 60 MHz	13.8 VDC	22A	1-40W		100 W	100 W	100 W	600	Triple Conversion	<18 μ v at 10 dB	± 9.9 kHz	Manual	>2.0 W
IC-7600	300 kHz - 60 MHz	13.8 VDC	23A	1-30W	2-100	2-100	2-100	2-100	600	Double Conversion	<15 μ v at 10 dB	± 9.9 kHz	Man + auto	>2.0 W
IC-7700	300 kHz - 60 MHz	85-265VAC	5.6A	50W†	200†	200†	200†	200†	600	Double Conversion	<16 μ v at 10 dB	± 9.9 kHz	Man + auto	>2.6 W
IC-7800	30 kHz - 60 MHz	85-265VAC	5.6A	50W†	200†	200†	200†	200†	600	Double Conversion	<16 μ v at 10 dB	± 9.9 kHz	Man + auto	>2.6 W
IC-7410	30 kHz - 60 MHz	13.8 VDC	23A	2-27W	100	100	100		600	Double Conversion	<16 μ v at 10 dB	± 9.9 kHz	Man + auto	>2.0 W

† Output is continuously adjustable from 5 to full power. * 50 W on 2 meters, 20 W 70cm. ## 2-100 W HF / 50 MHz, 2-50 W VHF, 2-35 W UHF.



IC-7800

The IC-7800 has 110 dB dynamic range and +40 dBm 3rd order intercept point in the HF bands. It has a general coverage receiver for 300 kHz to 60 MHz, transmits on amateur HF bands (except 60 m) plus 6 m with 5-200 Watts out (5-50 W AM). There is a high speed antenna tuner, two types of receive preamps and 7-step attenuator, two completely independent receiver circuits, digital IF filter and manual notch filter.



- 50 CTCSS tone encoder / decoder.
- VOX capability.
- DSP controlled CW keying waveform shaping. Memory keyer.
- Mechanical relay band pass filter. Three roofing filters.
- Automatic tracking.
- Double conversion super-heterodyne system.
- AGC loop management using the DSP unit.
- AGC fine tuning.
- Real time spectrum scope.
- Four 32-bit floating point DSP units and 24-bit AD/DA converters.
- Ultra high stability OCXO.
- 50 MHz band preamplifier & mixer.
- Digital twin passband tuning.
- Variable level noise reduction.
- 7" wide color TFT LCD.
- RTTY / PSK31 operation without PC connection.
- Microphone equalizer. Adjustable transmit bandwidth.
- CF memory card for recording personal settings.
- Digital voice recorder.
- RF speech compressor.
- SSB data mode.
- 4 antenna connectors.
- Triple band stacking register.
- Variable noise blanker.



IC-7700
Contester's Rig

This rig has two 32-bit floating point DSP units – one for the transmitter / receiver and the other for the spectrum scope. There is a +40 dBm 3rd order intercept point and ultra wide dynamic range. Two IF stages and Icom's image rejection technology allow very weak signals and very strong signals to be heard without distortion.

- Automatic tracking pre-selector.
- 200 W output at full duty with high speed automatic antenna tuner.
- Professional 6 m receiver.
- Ultra high frequency stability.
- Multi-function spectrum scope.
- Digital voice recorder.
- RTTY / PSK31 operation without PC connection.
- IF notch filter with adjustable characteristics.
- USB ports in front and rear panels.
- RS-232C port for PC connection.
- General coverage receiver for 0.3 to 60 MHz.

HF Plus VHF / UHF

IC-7100

**HF Plus 6 m,
VHF / UHF
with D-STAR
Multi-Band
All-Mode
Operations**



- Intuitive touch screen interface.
- Easy-to-see, easy-to-use slant top controller.
- Built-in high efficiency oval speaker on the controller.
- D-STAR DV mode digital voice and low speed data communications.
- 505 memory channels.
- SWR graphic display.
- Optional MBF-1 mounting base.
- Built-in SD card slot for voice storage and data cloning.
- Easy vehicle mounting (optional MBF-1).
- IF DSP controlled digital features. The 32 bit floating point DSP supports many digital processing features such as digital IF filter, twin PBT and manual notch filters.
- Remote Control Software (optional RS-BA1 IP).
- Built-in RTTY functions.
- CW full break-in.
- CW auto tuning.



IC-7000

HF Plus VHF / UHF

With its digital signal processing, this mobile outperforms some base stations. It has improved AGC loop performance, digital IF filters, two-point manual notch filter, a digital voice recorder, flexible installation with a detachable panel, remote control microphone, a 2-mode band scope with simplified one-touch operation.



- Internal memory keyer.
- Control circuit for optional antenna tuners.
- Built-in voice synthesizer.
- CI-V control capability.
- 503 memory channels.
- 100-step digital noise blanker.
- Multi-function S / PWR / SWR meter.
- Receiver preamp & attenuator.
- CTCSS / DTCSS tone squelch.
- 16-step digital noise reduction, RIT.
- ± 0.5 ppm high frequency stability.
- Adjustable RF output.
- Digital RF speech compressor.
- Bass and treble audio equalizer.
- Adjustable SSB transmit bandwidth.



IC-7200

HF Plus 6 m

Shown with optional handles

The IC-7200 is a simple, tough rig that uses the latest IF DSP technology. Distortion and blocking from strong nearby signals are prevented by placing DSP functions inside the AGC loop. The built-in digital filter eliminates the need for optional CW and SSB filters. Features digital twin PBT, manual notch filter, digital noise reduction, and digital noise blanker. The direct digital synthesizer (DDS) creates a clear, clean transmit signal. The IC-7200 has USB port for PC control, RF speech compressor, full break-in for CW, selectable CW carrier point, adjustable CW pitch, RIT, VOX, backlight LCD display, CI-V interface, 201 memory channels, preamplifier, band stacking register, built-in voice synthesizer and built-in 20 dB attenuator.

All-Band HF

IC-718



- Receives 0.03 ~ 29.995 MHz.
- Transmits HF amateur bands except 60 m.
- Output power: SSB / CW / RTTY: 5 ~ 100 W variable, AM: 2 ~ 40 W variable.
- 101 memory channels.
- Modes USB, LSB, CW, RTTY, AM.
- IF shift interference rejection.
- DSP built-in.
- Built-in electronic keyer.
- VOX operation, mike compressor, RF gain control.
- 10-key pad for direct operating frequency entering and memory channel selection.



**All-Mode
HF Plus 6 m
IC-7410**

- Faster DSP and AD/DA converter for higher dynamic range and S / N ratio.
- Double conversion superheterodyne.
- 30 dBm 3rd order intercept point.
- 3 first IF filters. FL-431 and FL-430 optional.
- Large, multi-functional LCD.
- USB connector for PC control.
- RTTY demodulator and decoder.
- Simple band scope.
- Wide range of DSP features.
- Ample CW functions.
- High frequency stability.
- Large heat sink.

Dual Band Mobile

**Ready for the Road
with D-Star and GPS***

IC-2820H



This D-STAR-compatible* mobile transceiver provides 50 W on both VHF and UHF. The optional UT-123 provides an on-board GPS module for D-PRS operation and realtime location data on the 2820's display. V/V U/U simultaneous receive, diversity receive capability with 2 antennas, 522 memory channels, built-in wide band receiver. Controller can be separated from main unit.

*Requires optional UT-123

- Wideband receive covers 118-549.995 and 810-999.990 MHz (cellular blocked).
- Easy to read graphical interface display. Tuning buttons and display buttons are side-by-side for easy operation.
- Band scope functions let you watch conditions near the receiving frequency.
- 104x2 DTCS / 50 CTCSS tone squelch operation.
- DTMF pager and code squelch.
- Automatic attenuator.
- FM narrow capability.
- Max 45 channels/sec high speed scan in programmed scanning mode.
- 9600 bps packet terminal, mini DIN (6 pin) connector.
- 16 DTMF memory channels.
- DTMF pager and code squelch function.
- GPS features (with optional UT-123) include, location information exchange, GPS alarm, GPS location tracking.
- Low speed data communication when connected to a PC with optional OPC-1529R.

Extended Warranties. See Page 27.

VHF / UHF MOBILES

Digital Transceivers

VHF / UHF Satellite Plus HF / 6 m Plus D-Star DV Mode



IC-9100

With built-in satellite mode operation, the IC-9100 covers HF / 50 MHz, 144 / 430 (440) MHz, and 1200 MHz frequencies. The optional

UX-9100 is required for 1200 MHz. The rig has 100 Watts output on HF / 50 / 144 MHz; 75 Watts on 430 (440) MHz; 10 Watts on 1200 MHz.

- Double superheterodyne receiver with image rejection mixer.
- SSB, CW, RTTY, AM, and (with the optional D-Star unit) DV mode.
- 32-bit floating point DSP and 24 bit AD / DA converter.
- Optional 3 kHz (FL-431) and 6 kHz (FL-430) 1st IF (roofing) filters.

ID-880H

D-STAR just keeps getting better and better and so does Icom's entry-level D-STAR dual band mobile, the ID-880H. An improved user interface, smart new look and free programming software are included. Comes with a magnet mount front panel like the IC-2820H. There are lots of signaling options too.



- Transmit 2 m / 70 cm.
- Receive 118 - 999.99 MHz (cellular blocked).
- TX Modes FM / DV.
- RX Modes AM / FM / DV.
- 800 Memory channels

- Output power 50 W on UHF and VHF.
- DTMF codes.
- 10 memory banks.
- Free programming software.
- V/U or U/V switchable operation.

IC-ID-1

While the ID-1 transceiver is a vital part of a D-Star system, you won't have to wait for a new repeater to be set up in your area. This rugged little rig operates with current analog 1.2 GHz repeaters, plus simplex digital operation with

another ID-1. Its operating frequency range is 1240-1300 MHz with FM and GMSK (Digital) modulation formats. The ID-1 includes alphanumeric memory channels, CTCSS encode / decode and scanning, PLUS full PC control via the USB port (a black box 1.2 GHz radio!). Now for the fun part... the ID-1 supports a 10 BASE-T ethernet cable for the 128K data operation! Explore the benefits of wireless high-speed integrated digital connections!



Display Unit

Icom VHF Specifications

Model	Freq Range	Mode	Power Supply	Current Drain Xmit	Current Drain Rec	Power Out Watts	Ant Z ohms	Mike Z ohms	Sens	Audio Power	Built-in AC Supply
IC-2300H	2m †	FM	13.8 VDC	11 A	1.5 A	65	50	600	<18 µV	4.5 W	no
IC-V8000	2m	FM	13.8 VDC	15 A	1.0 A	75	50	600	<15 µV	>2.0 W	no
IC-2820H	2m / 70 cm%	FM	13.8 VDC	13A	1.8A	50 / 50	50	600	<18 µV	>2.4 W	no
ID-880H	2m / 70 cm%	FM	13.8 VDC	11.5 A	1.2 A	50 / 50	50	600	<16 µV	>2.4 W	no

† Extended receiver coverage 118-174 MHz (airband included), 440-450 MHz %extended receiver range. See text with radio.

2m Mobiles

IC-2300H 2 m

The IC-2300 2m Mobile transceiver is the updated version of the IC-2200H. The new model retains the same basic features

as the IC-2200H: powerful 65 W output, simple-to-use user interface, and built-in CTCSS / DTCS encoder / decoder. The IC-2300H is packed into a smaller body in depth than the IC-2200H.



- Retains simple operation with a large tuning dial. Secondary functions are recalled by holding the appropriate button.
- 207 alphanumeric memory channels.
- Dynamic memory scan allows scanning of selected memory banks.
- Pocket beep function for incoming calls.
- DTMF autodial.
- Selectable yellow, green or amber display.

- PC to XCVR and XCVR to XCVR cloning (optional software and cable required).
- Automatic repeater function and weather channel (USA only).
- Power supply voltage display, time-out timer, repeater lock out, automatic power off.
- Selectable squelch delay and squelch attenuator.
- Wide / narrow channel setting.
- Tested and passed MIL-STD 810G specifications.

75 Watts of power for your ultimate 2 m mobile experience

IC-V8000

The IC-V8000 combines a one piece, die-cast aluminum chassis with 75W of transmit power to give you the most powerful 2m mobile transceiver in its class.

- Remotely control rig with HM-133 mike (included).
- Easy operation with a quick reference of user-defined memory channel information.
- 6 character alphanumeric display.
- CTCSS & DTCS are standard.
- Front firing speaker.
- FM narrow mode switchable.

- DTMF encoder is standard with 10 channels with up to 24 digit DTMF codes.
- Optional UT-108 DTMF decode.
- Dynamic Memory Scan has 200 alphanumeric memories. DMS system allows customized scanning in 10 banks.
- Clone from a PC or between radios.
- Weather Alert Scan (US only).



Extended Warranties for Icom Radios

IC-92AD 2 m / 70 cm



- Submersible to a depth of one meter for 30 minutes.
- Wideband receiver has dualwatch capability.
- 5 Watts output.
- Simple bandscope.
- Built-in voice recorder.
- Large dot-matrix display; one touch reply button; keypad navigation.
- Optional PC remote control capability.
- 1304 memory channels.
- Built-in CTCSS / DTCS tone encoder.
- Optional GPS speaker-microphone (HM-175GPS).
- 26 memory banks with selected bank and bank link scanning.
- 10 channel DTMF memory (16 digit).
- Weather channel with weather alert (US and Canada only).

IC-80AD Dual Band 2 m / 70 cm

Shown with optional speaker / microphone

Looking for an affordable way to climb aboard the D-STAR digital express? This entry level hand held D-STAR transceiver delivers great features and robust analog performance.

- TX: 2 m / 70 cm bands.
- RX: 0.495-999.99 MHz (cell blocked).
- Power out selectable – 5 W / 2.5 W / 0.5 W / 0.1 W.
- Mode TX- FM / DV.
- Mode RX - AM / FM / WFM.
- Li-ion, 7.4 V, 1300 mAh.
- Backlit alphanumeric LCD display and keypad.
- 20 character short text messaging with on-screen display.
- Free download cloning software.
- GPS position reporting.
- Optional GPS speaker / microphone.



Compact Dual Bander ID-51A with D-STAR



- The ID-51A has 5 Watts output with the standard 7.4 VDC battery.
- MicroSD card slot for voice and log data storage and data cloning.
 - Voice memory records incoming and outgoing calls. Can be used as a voice recorder.
 - CVS formatted communications log.
 - 1304 memory channels: repeater, program scan edges, and call channels.
 - Transmit 144-148 and 430-450 MHz.
 - Receive A: 137-174, B: 108-174, 380-479 MHz.
 - Broadcast band receive 0.52-1.710, 88-108 MHz.
 - FM, AM, and shortwave can be listened to while using the dual watch function for ham bands. The broadcast station mutes when a ham signal is received.
 - Automatic position reply function transmits your current position when receiving a call.
 - Large dot-matrix display.
 - Independent AM / FM receiver.
 - 10 step battery voltage indicator.
 - D-STAR DV mode.
 - V/V, U/U, V/U dual watch receives two bands simultaneously including the same band.
 - Voice synthesizer function announces frequency, mode, and call sign.
 - IPX7 submersible.
 - Integrated GPS.
 - Repeater search function searches up to 20 nearby repeater sites.
 - CTCSS and DTCS.

Handheld Batteries & Chargers

Model	Volts	Rating mAh	Trickle Charger	Rapid Charger
BP-206	3.6	1650	BC-149A-02	BC-156-02
BP-210N	7.2	1650	BC-146-01#	BC-144N
BP-217	7.4	1500	BC-167SA	BC-139-02
BP-222N	7.2	600	BC-146.01#	BC-144N
BP-227	7.2	1700	BC-146-01#	BC-119N-51
BP-256	7.4	1620	BC-167SA	BC-177-02
BP-264	7.2	1400	BC-192-12#	BC-191-12*
BP-265	7.4	1150		BC-193-12*
BP-271	7.4	1150	BC-167SA	BC-202-02
BP-272	7.4	1880	BC-167SA	BC-202-02

Requires BC-147S AC adapter.

* Requires BC-123S AC adapter.

"AA" Alkaline Packs

BP-204, BP-208N, BP-257, BP-283, BP-273

Dual Band

IC-T70 HD



The IC-T70A offers impressive audio output volume, long-lasting power, plenty of memory channels, rugged construction, and analog features:

- TX: 2 m / 70 cm bands.
- RX: 136-174, 400-479 MHz (US version).
- Power out selectable – 5 W / 2.5 W / 0.5 W.
- 700 mW loud audio.
- Long lasting battery life. Up to 13.5 hours with supplied BP-265.
- External DC power jack.
- 392 alphanumeric memories including 50 band edges and 2 call channels. Maximum of 26 memory banks for scanning.
- Built-in CTCSS / DTCS.
- Internal VOX, WX channel, direct keypad frequency entry, 16 DTMF autodial memories.
- IP54 / MIL-STD-810 rugged construction.

IC-T70HD Accessories

Model	Description	HRO Price
Cloning		
CS-T70	Cloning software	\$39.95
OPC-474	Radio to radio cloning cable	\$17.95
OPC-478UC	PC to radio programming cable, USB	\$60.95
Headphone / Microphone Accessories		
HS-94	Ear-hook headset w/flexible boom microphone	\$22.95
HS-95	Behind-the-head headset w/flexible boom microphone	\$144.95
HS-97	Throat microphone	\$35.95
HM-131	Spkr Mic w/earphone jack & clip	\$37.95
HM-153	Durable earphone microphone	\$69.95
SP-27	Acoustic tube earphone	\$35.95
Other Accessories		
AD-92SMA	BNC antenna adapter	\$18.95
OPC-2006	Cable to use with HS-94, -95, or-97	\$22.95
OPC-254L	DC Power Cable	\$16.95
OPC-515L	DC Power Cable (BC191, BC192, BC193)	\$20.95
CP-12L	Cigarette lighter cable w/ noise filter	\$34.95
FA-S270C	Antenna (same as supplied)	\$33.95
MB-124	Alligator Belt Clip	\$10.95

HANDHELDS & ACCESSORIES

2m Handheld



IC-V80 HD or IC-V80 Sport Basic Rugged 2 m with Powerful Audio

Available either as an economic 2 m HT with alkaline battery case (BP-263) or with BP-265 battery and drop-in charger.

Features include:

- IP54 / MIL STD-810 rugged construction.
- 5.5 Watts out.
- Up to 19 hours operation with optional BP-265.
- 207 memory channels.
- Built-in CTCSS / DCS.
- Internal VOX function.
- WX channel.

D-Star Digital 70 cm Handheld



ID-31A 70 cm

- Lightweight, compact body.
- PC programmable. CS-31 cloning software supplied.
- 1,252 memory channels. Name all memory banks with 16 character channel comments.
- Full dot-matrix display and directional keypad.
- IPX7 submersible construction.
- 5 W output power.
- Built-in GPS receiver.
- D-Star digital voice mode.
- Automatic repeater list-up function; micro SD card slot.

- Multiple scanning functions.
- Built-in CTCSS / DTCSS encoder and decoder.
- Sixteen 24-digit DTMF memories.
- Optional CT-17, CI-V for remote radio control.

**Extended Warranties for
Icom. See Page 27.**

Icom Handheld Accessories		2 m	DUAL - TRI-BAND				70 cm
		V80	ID-51A	T70 HD	80AD	92 AD	ID-31A
Battery Packs	BP-217				◆		
	BP-256					◆	
	BP-264	◆		◆			
	BP-265	◆		◆			
	BP-271		◆				◆
	BP-272		◆				◆
Battery Cases	BP-263	◆		◆			
	BP-273		◆				◆
	BP-216				◆		
	BP-257					◆	
Carrying Cases	LC-163				◆		
	LC-168					◆	
	LC-174			◆			
	LC-178						◆
	LC-179		◆				
Cables	CP-12L		◆	◆	◆	◆	◆
	CP-17L	◆					
	CP-19R		◆	◆	◆	◆	◆
	OPC-254L		◆	◆	◆	◆	◆
	OPC-474	◆			◆	◆	
	OPC-478/478U				◆		
	OPC-515L	◆		◆			
	OPC-2004	◆					
	OPC-2006LS		◆				◆
	OPC-2144		◆				◆
	OPC-1529R					◆	
Speaker Mics	HM-75A		◆		◆	◆	
	HM-75LS		◆				◆
	HM-131			◆	◆		
	HM-153				◆		
	HM-153L	◆		◆			◆
	HM-153LS		◆	◆	◆		◆
	HM-158L-LG	◆					
	HM-159L-LG	◆					
	HM-166LS		◆		◆		◆
	HM-174					◆	
	HM-175GPS					◆	
	HM-186LS		◆				◆
Headsets	HM-189GPS	◆					
	HS-85				◆	◆	
	HS-94	◆	◆	◆			◆
	HS-95	◆	◆	◆			◆
	HS-97	◆	◆	◆			◆

Icom Handhelds

Model	Frequency	Power Supply	Power Out Transmit*	Current Transmit	Drain Receive	Sensitivity at 12 dB	Height in(cm)	Width in(cm)	Depth in(cm)	Weight oz(g)	HRO Price
IC-T70HD	2m / 70 cm	7.2 VDC	5.0/2.5/5 W	2.1 A	<450 mA	<.18μV	4.8(11.1)	2.3(5.8)	1.2(3.0)	13.4(380)	CALL
IC-V80	2m	7.2 VDC	5.5/2.0/5 W	1.4 A	310 mA	<.14μV	4.4(11.2)	2.3(5.8)	1.2(3.0)	12.7(360)	CALL
IC-80AD	2m / 70 cm †#%	7.2 VDC	5.0/2.5/5.1 W	1.8 A	215 Ma	<.14μV	4.1(10.3)	2.3(4.1)	1.3(3.4)	10.3(290)	CALL
IC-92AD	2m / 70 cm †	7.4 VDC	5.0 W	2.1 A	<220 mA	<.16μV	4.4 (11.2)	2.3(5.9)	1.4(3.4)	11.5(325)	CALL
ID-31A	70 cm	7.4 VDC	5.0 W	2.5 A	<450 mA	<.18μV	3.74 (9.5)	2.28(5.8)	1.0(2.54)	7.94(225)	CALL
ID-51A	2m / 70 cm	7.4 VDC	5.0 W	2.5 A	<450 mA	<.18μV	4.1 (10.5)	2.28(5.8)	1.0(2.6)	9.0(255)	CALL

* Power with standard battery pack. † Frequency coverage 138-174 (receive only outside amateur bands), 440-450 MHz.

Extended receive 118-174 MHz and 400-470 MHz. % 0.495-999.99 cellular blocked.

IC-R20

The IC-R20 features voice scan control, attenuator, RF gain control, noise blanker, automatic noise limiter, multiple scan functions, CI-V PC control (with optional CT-17), backlit keypad. Features include wide range receive 0.15 to 3304.9999 MHz (822-851 and 867-896 MHz blocked), SSB/CW/AM/FM/WFM, dual watch between bands, IC audio recorder, auto squelch, 1250 memory channels, CTCSS / DTCS / DTMF decode, internal bar antenna for AM reception.



IC-R6

The IC-R6 is a Signal Search Machine. Covering 100 kHz to 1309.995 MHz (cellular blocked and receives analog TV only), it can search 100 channels per second. The receiver is energy-efficient, designed to provide up to 15 hours of listening on a single charge.



With 1300 alphanumeric memory channels, 50 scan edges, and 200 auto-write memories, there are many scanning opportunities. The bank link feature allows connecting any of the 22 memory banks. The Voice Squelch Control opens the squelch only when a modulated signal is detected.

IC-R6 Accessories

Model	Description	HRO Price
Cloning		
CS-R6	Cloning Software	\$44.95
OPC-478	Cloning Cable (RS-232C)	\$44.95
OPC-474	Radio to Radio Cloning Cable	\$17.95
OPC-478UC	USB PC to Radio Programming Cable	\$60.95
Headphone Accessories		
SP-13	Earphone	\$4.95
SP-27	Tube Earphone	\$35.95
Other Accessories		
AD-92SMA	BNC antenna adapter	\$18.95
BC-196SA	AC Adapter (same as supplied)	\$49.95
BC-194	Charger Stand	\$29.95
CP-18A	Cigarette Lighter Cable	\$33.95
LC-146A	Carrying Case	\$25.95
FA-S270C	Antenna (same as supplied)	\$33.95
CT-17	CI-V Level Converter	\$135.95



IC-R75

This receiver covers the HF bands plus 6 meters (0.03 to 60 MHz). It features twin PBT, built-in DSP capability, and a front mounted speaker. Modes include USB/LSB, CW, RTTY, AM/S-AM and FM. A complete line of filters is available. Operates at 13.8 VDC \pm 15% at 2.0 A. Features 101 memories (99 regular and 2 scan edges). Program scan, memory scan and priority scan. Direct frequency input with numeric keypad. Two-level pre-amp, noise blanker and selectable AGC.



IC-R9500 Professional Communications Receiver

- +40 dBm IP3 / 110 dB wide dynamic range.
- Measuring class accuracy. Dual IF filter.
- Superior BPF unit.
- Dual DSP. 10 VFOs.
- 7" wide color TFT LCD.
- High resolution spectrum scope. 1000 memories.
- 2 channel noise blanker.
- 5 roofing filters. 2 point manual notch filter.
- 0.005-3335 MHz. Cellular blocked.
- All bands: SSB, CW, FSK, AM, FM, WFM on some.
- Digital voice recorder.
- 4 antenna connectors

HF Automatic Antenna Tuner



AH-4

The AH-4 auto-tuner covers all amateur bands from 80 to 6 meters when used with a minimum 23' long wire antenna. With the optional AH-2b antenna element, tune 40 through 6 meters for mobile operation. It has automatic band changes and tunes usually in less than 2.5 seconds. The 45 memories store SWR minimum and tuning combinations. Requires only 300 mW to tune and handles up to 120 Watts. **HRO Price \$275.95**

Software

RS-BA1 IP Remote Control for HF Transceivers

Remotely control Icom transceivers through an IP network with the RS-BA1. The RS-BA1 allows you to use the radio installed in another room using your home network or a remote location over the Internet. The low voice latency caused by the RS-BA1 provides the same operational experience as using an actual radio. Most functions and modes of your transceiver can be controlled.

The RS-BA1 has two component applications: System Configuration to set up the IP address and other settings, and Remote Control allows you to control the radio. The display on the RS-BA1 is similar to the radio's front panel. Supports the IC-7200, 7410, 7600, or 9100 with USB connection to a PC. Also the IC7800 or 7700 connected to a PC with an RS-232C cable plus S/P DIF or ACC cable.

Icom Cloning

Icom cloning software for Windows allows you to preprogram memory channels with operating frequencies, set tones, set power levels, set squelch levels, set up auto-dial DTMF frequencies, and exchange operating frequencies. Call for price quotes.

- **CS-R3** without cable (R3).
- **CS-R5** without cable* (R5).
- **CS-2720H** without cable* (2720H).
- **CS-V8A** without cable (V8A).
- **CS-2800** without cable (2800).
- **CS-T90A** without cable (T90A).
- **RS-91** for IC-91A series.
- **RS-92** for IC-92AD.

* OPC-478U USB cable for IC-2720H and IC-R5.

Power Supply

PS-126



Matching supply for IC-7600.

HRO Price \$CALL

**HRO Offers Extended
Warranties on Icom Radios. See Page 27.**

Peerless Performance



TS-590S

HF / 50 MHz All Mode Transceiver

\$CALL – HRO Price

Marking a bold chapter in Kenwood's proud history of high-performance compact HF transceivers, the TS-590 features a narrow-band roofing filter to significantly reduce interference from unwanted signals. The resulting excellent RX performance and reveals signals that would be hidden to lesser rigs. With IF AGC based on advanced DSP technology, Kenwood has essentially redefined HF performance.

- With a sharp 500 Hz / 2.7 kHz roofing filter and dedicated first mixer, this transceiver has the best dynamic range in its class to handle adjacent unwanted signals.
- Transmitter features: 100 Watt heavy-duty design, built-in automatic antenna tuner, optional TCXO, drive output (including 135 kHz band), speech processor (SSB / AM / FM), adjustable TX filter (SSB / AM), TX equalizer (SSB / AM / FM), TX monitor; VOX, adjustable TX power output and CAR level.

- Besides basic functions such as AGC, digital IF filters, detection and demodulation, a wide range of features including noise reduction and IF notch are all implemented with the latest algorithms: IF auto notch, IF AGC, AF digital signal processing, two types of noise reduction, and TX audio shaping.
- CW support includes CW auto tune, 2 key terminals, full and semi-break-in, memory keyer, electronic keyer.
- Large display with 2-color LED backlight.
- Direct frequency entry, USB connectivity for PC control, remote control using a computer, optional voice guide and storage unit.
- Programmable keys, 110 memory channels, memory scroll function, multiple scan functions.
- FSK RX equalizer, ATT, pre-amp, adjustable RF gain, selectable SQL level, FM wide / narrow, CTCSS, cross-tone.



TS-990S

\$CALL – HRO Price



Kenwood's TS-990S will raise the bar on HF performance and DX operating ease in more ways than one. The dual display and dual watch function will give you the edge in DX contesting.

- Frequency range HF + 50 MHz.
- Output power: 5 W-200 W.
- Built-in antenna tuner.
- Mode: SSB, CW, FSK, PSK, FM, AM.
- Built-in switching power supply.
- Comm ports: USB A / B and LAN.
- Dual TFT display and dual receiver.
- Down conversion for all Amateur Radio Bands (main receiver).
- IP3 + 40 dBm mixer performance
- Narrow-band high-IP roofing filters.
- TCXO ± 0.1 ppm for high stability on receive.
- Dedicated triple DSP for main & sub-receivers plus band scope.
- Advanced AGC – digital and analog.
- A maximum of 120 memory channels. Dual channel memory allows memory access while receiving two frequencies simultaneously.
- Remote PC operation. Data mode facilitates switching between external terminals.
- Two USB sockets on front panel.
- Firmware updates via USB stick or USB cable.

Compact, Portable HF Mobile

TS-480HX TS-480SAT

\$CALL – HRO Price

HF Transceiver



With its separate control panel, the TS-480 is perfect for base station use, while ample receive audio makes it outstanding for mobile applications. Using 13.8 V for power, the TS-480HX delivers 200 W; the TS-480SAT delivers 100 W. The TS-480SAT also has an automatic antenna tuner.

- 500 kHz–60 MHz general coverage receiver.
- Separate LCD control panel with speaker. It can be positioned up to 4 meters from the main unit.
- PC-based control.
- TX / RX AF DSP. 16-bit AF digital signal processing offers noise reduction, TX / RX equalizer and AF filters.
- Optional IF filters available.
- TX covers all amateur bands 1.8 MHz to 60 MHz plus 5 MHz band for the US.
- Quad-mixer provides RX dynamic range in the TS-950 class.
- PSK-31 compatibility.
- Packet cluster tune with optional TM-D710A with user supplied cables.
- Additional front panel available.

Extended Warranties available for Kenwood Radios

Kenwood HF Specifications

Model	Receiver Frequency Range	Power Supply		Current Drain		Power					FSK Shift	Mike Z ohms	Receive Circuitry	Sensitivity	RIT / XIT	Notch Filter	Audio
		50/60 Hz AC	DC	Xmit	Rec	AM	FM	SSB	CW	FSK							
TS-2000*	0.5-30 MHz, 50-54 MHz, 144-138 MHz, 430-450 MHz, 1240-1300 MHz		13.8 V	20.5 A	2.0 A	100	100	100	100	100	100	600	Quadruple Conversion	<11 μ V SSB,CW,FSK (varies with band and mode)	± 20 kHz	> 30 dB	1.5 W
TS-590S	0.13 MHz - 60 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	100		600	#	< 2 μ V	± 9.99 kHz	> 70 dB	1.5 W
TS-480SAT†	500 kHz - 60 MHz		13.8 V	20.5 A	1.5 A	25	100	100	100	100		600	#	< 2 μ V	± 9.99 kHz	—	2 W
TS-480HX	500 kHz - 60 MHz		13.8 V	41.0 A	1.5 A	50	200	200	200	200		600	#	< 2 μ V	± 9.99 kHz	—	2 W

Double Conversion SSB, CW, AM; Triple FM (1)170, 200, 425, 850 Hz

*Output 440 MHz 50 W and 1000 MHz 10 W

†Output 6 M 480 HX - 100 W / 50 W AM 480 AT 50 W / 25 W AM

All-Mode / All-Band



TS-2000
\$CALL

— HRO Price

The TS-2000 is a marvel of electronic engineering. The TS-B2000 is a "Black Box" version for computer control or vehicle use with the optional RC-2000 mobile controller. ARCP-2000 radio control software is supplied with the TS-B2000.

- All mode multiband: HF (not 60 m) / 50 / 144 / 440 / 1200 MHz (optional UT-20 required for 1200 MHz operation on the TS-2000).
- 500 kHz to 1300 MHz wide band receiver with dual-channel receive. Has satellite mode plus a sub 144 / 440 MHz FM / AM receiver so two frequencies can be received simultaneously.
- Built-in TCXO with professional performance ± 0.5 ppm (-10 to 50 degrees C).
- The IF digital signal processing provides for DSP detection, digital filtering, IF auto notch and IF AGC.
- The transmitter provides 100 Watts on HF / 50 / 144 MHz bands (AM 25 Watts). 50 (AM 12.5) Watts on 440 MHz. 1200 MHz operation, the unit delivers 10 (2.5 AM) Watts.
- High speed processing using two 16-bit DSP chips, double precision computing and a 100 MHz CPU and 24-bit A/D and D/A converters.
- The Kenwood Sky Command System II Plus is built-in.
- Built-in auto antenna tuner, DX cluster tune and an antenna terminal dedicated to HF low-band operation.



TS-B2000

2 Meters plus Weather

TM-281A

\$CALL

HRO Discount
Price



On or off road, the TM-281A delivers powerful mobile performance with 65 W maximum output. The weather alert radio function checks the 1050 Hz tone from NOAA (US only). The radio features 200 memories (100 if memory channel names are assigned to the channels), menu for easy control and function selection, CTCSS or DCS to reject unwanted calls, easy to read large LCD alphanumeric display, FM and narrow band FM ready, and free PC memory control software is available.

**HRO Offers Extended Warranties
for Kenwood Radios. See Page 27.**

Dual-Band Mobiles

TM-D710A
2 m / 70 cm

\$CALL

HRO Discount Price



Kenwood provides advanced APRS® ham radio equipment with the TM-D710A mobile transceiver.

It offers even more features and versatility than its predecessor. The detachable control head comes with remote cable for easy installation. The radio incorporates a 9-pin PC connection for easy hook-up to program frequencies and other APRS® mapping programs. Your TM-D710A is a full dual-band operation radio so VHF+VHF / VHF+UHF / UHF+UHF operation is possible. Full digipeater functions allow anyone to set up a digipeater location wherever needed to help fill in APRS® nationwide network. Internet gateway operation is also possible for world-wide text communication over VHF.

- Output 50 W VHF / UHF.
- Receives 118-1300 MHz (cellular blocked).
- Two back light colors: amber / green.
- Alphanumeric dot-matrix LCD display.
- Easy-to-use menus.
- Internal clock for APRS® time & date stamping.
- APRS® filter and sort functions.
- APRS® speed and altitude beaconing.
- Three different APRS® grids.
- EchoLink® ready with 10 dedicated memories.
- APRS® QSY function, delay algorithm, voice alert and weather beaconing.
- Dual receive and NOAA weather alert.
- 1000 memories.
- SkyCommand II.
- Sound card interface.
- VGS-1 voice guide and storage optional.
- NMEA 0183 GPS i/O port.
- Free MCP programming software.



TM-V71A
2 m / 70 cm

Kenwood's TM-V71A FM dual bander is locked and loaded for action. It is equipped to shine in any mobile communications role. It features 50 W output, 1000 memory channels, multiple scan options and PC connectivity.

- High power output - 50W on VHF / UHF.
- Same band dual receive (V/V, U/U, V/U).
- Compatible with ARRL Travel-Plus.
- "Five-in-One" programmable memory storing five different operating profiles.
- 1000 split memory channels plus an additional 10 for programmable scan.
- PC programmable w/PG-5G (optional).
- Built-in CTCSS/DCS encoder.
- 104-code digital code squelch.
- Invertible front panel.
- Choice of backlight (amber / green).
- Voice guidance and storage option with optional VGS-1.
- Weather alert/RX (US only).
- EchoLink® Sysop mode for node terminal operation.
- EchoLink® memory autodialer.
- Wide band receive (118-524 MHz and 800-1330 MHz cellular blocked).
- MC-59 16-key hand mic with backlighting.
- Selectable repeater offset or auto repeater offset (on VHF only).

TNC with APRS®



RC-D710

Add TNC to Your TM-V71A

The RC-D710 is a stand alone 1200 / 9600 bps TNC with APRS® firmware. With the supplied accessories, the RC-D710 is a full upgrade to the TM-V71A. By exchanging the TM-V71A panel with the RC-D710, you will have the full functionality of the TM-D710A. Supplied accessories include: open ended GPS cable, cable with modular plug for panel connection, two bases for control head (mobile and base), line filter, and instruction manual on CD-ROM.



PG-5J

Interface Kit

Functioning as an external modem, the PG-5J connection kit makes the RC-D710 a complete stand alone APRS® /TNC for any of these Kenwood models: TM-D710A, TM-V71A, TM-D700A, TM-G707A, TM-V7A, TM-732A, TM-733A, TM-255A, TM-455A. Includes data and DC cables.

Extended Radio Warranties

Kenwood VHF / UHF Specifications

Model	DC Power Supply	Current Drain		Output Power	Sensitivity	HRO Price
		Transmit	Receive			
TM-281A	13.8 V	13 A	1.2 A	65 W	<16 μ V	CALL
TM-V71A	13.8 V	13 A	1.2 A	50 W / 50 W	<16 μ V	CALL
TM-D710A	13.8 V	11.5 A	1.0 A	50 W / 50 W	<16 μ V	CALL

Handheld Battery Packs / Chargers

Battery	Voltage	Rating MAH	Desk Charger	Radio Series	HRO Price
PB-42L	7.4	2000	-	TH-F6A	\$73.95
PB-43N	7.2	1100	KSC-24	TH-K2AT	\$41.95
PB-45	7.4	1800	KCS-32	TH-D72A	69.95
KNB-63L	7.4	1130	KSC-35S	TH-K20A	31.95

Kenwood Handheld Specifications

Model	Freq Range	Power Supply	Power Out	Current Transmit	Current Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Discount Price
TH-K20A	144-148 MHz	6-9 VDC	5.5 W			<16 μ V	4.4 (11.2)	2.13 (5.4)	1.0 (2.5)	7.4 (210)	CALL
TH-F6A	144/220/440MHz	5-7.5VDC	5 W	2.0 A	35 mA	<13 μ V	3.4(8.7)	2.3(5.8)	1.2(3.0)	8.8 (250)	CALL
TH-D72A	144/440MHz	7.4VDC	5 W			<18 μ V	4.78(12.1)	2.28(5.8)	1.31(3.3)	13.1 (370)	CALL

Dual Band

TH-D72A 2 m / 70 cm

Enhanced GPS & APRS® capability

- 2 m / 70 cm transmit with wide band receive.
- Dual receive, V/V, U/U, V/U, U/V.
- 5 Watts transmit.
- Built in GPS uses the SiRF Star III chipset (same as Garmin).
- GPS track logging function. Memory can be output to PC in KML format to be displayed on Google Maps.
- 1000 memory channels with 8 digit alpha name function.
- Built in 1200 / 9600 TNC AX.25 with KISS mode and digipeat functions.
 - Mini USB connector built-in.
 - Built-in Kenwood Sky Command II.
 - External GPS ready, built in RS-232 com port (same as D7).
 - Air band RX with 8.33 kHz step.
 - Free programming software.
 - Smart beaconing.



One Band

TH-K20A 2 m

This 2-meter handheld is the successor to the TH-K2 series.

- Tone alert (bell).
- Cross tone.
- 5.5 W RF output.
- Weather CH scan.
- VOX Included (optional headset required).
- Auto repeater offset.
- Direct function key.
- Firmware upgradeable.
- Built-in CTCSS, DCS and 1750 Hz tone burst.
- Battery capacity indicator.
- Direct frequency entry.
- Auto repeater offset.
- Time-out timer.
 - Beat shift.
 - Frequency shift.
 - Key lock type select.



Tri Band

TH-F6A 2 m / 220 Mhz / 70 cm

\$CALL – HRO Price

The TH-F6A has a dual personality: it's a 3-band transceiver and also a wide-band (0.1-1300MHz*) receiver. In addition to FM / FMW / FMN / AM and SSB / CW, the receiver has a special weather channel mode.

It can receive 2 frequencies simultaneously, even on the same band. The rig features 435 memories including 3 call channels and another 20 for programmable scan. The HT comes equipped with a 7.4 volt 2000 mAh lithium-ion battery providing 5 Watts output. Ease of operation is achieved with a multi-scroll key that can be rocked up and down (frequency), left and right (band) with the thumb. Has a 16-key pad for direct entry, menu-driven interface, key illumination and backlit LCD display. Includes memory shift, key lock, time-out timer, wireless remote control.

*Cellular frequencies blocked



YAESU

The radio



FTDX5000MP

\$CALL for HRO Price

The FTDX 5000 MP HF / 50 MHz 200 Watt transceiver is a new premium class of Yaesu radio with 2 independent receivers plus many unique options and accessories designed to meet the performance requirements of even the most demanding serious amateur radio operator.

Desk Microphones

MD-200 A8X

\$CALL
HRO Price

Desk microphone designed for base station use with Yaesu's newest generation transceivers.

Features a studio-quality polyethylene terephthalate film dynamic element. Provision for incorporating user supplied mike element with a switch to select between the standard and user element.



MD-100 A8X

\$CALL
HRO Price

This desk microphone features selectable low-cut filtering and high-emphasis active filtering that allow you to tailor the microphone response for optimum voice clarity or DX punch. It has a large push-to-talk switch and latching button, along with a large rotary up/down, slow/fast control for scanning.

- The FTDX5000 robust and high-power final amplifier stage incorporates two super reliable FETs (VRF-150; drain-source voltage 170 V/gate source voltage ± 40 V, total device dissipation 300 W) in a push-pull configuration, offering a solid 200 W output (75 W class A operation).
- The FTDX 5000MP radio has its own built-in power supply (110 / 220 VAC).
- Two (2) totally independent receivers give you performance and flexibility previously only provided by much more expensive radios.
- Super sharp "roofing" filters for VFO-A / main receiver. Filters are selectable between 300 Hz, 600 Hz, 3 kHz (6-pole crystal filter), 6 kHz, 15 kHz (4-pole MCF).
- Variable CW audio peak filter, and high / low-cut filtering created through the very latest in DSP technology. CW width: 50 / 100 / 150 / 200 / 250 / 300 / 350 / 400 / 450 / 500 Hz. CW pitch frequency: 300~1050 Hz (10 Hz steps).
- Three electroluminescent clear displays included for easier operation and control of the sub-frequency, graphical wave and menu function.
- 32-bit floating point DSP based on the TI TMS320C6727B (@300 MHz), one EACH for VFO-A and VFO-B.
- True analog meter precision. Enjoy the huge size metering system true analog precision and instant reaction time.
- IF output (9 MHz) from VFO-A / main receiver.
- SM-5000 matching station monitor is included. With the bandscope is a complete, enhanced stereo speaker system with superb audio quality.
- Provides loads of practical level indication that clearly show settings of microphone gain / RF power / CW pitch / keyer speed / processor level / VOX delay time / break-in delay time.

Valuable Options

- **Yaesu Data Management Unit DMU-2000.** Utilize its powerful audio scope, oscilloscope, spectrum scope, logging, and rotator control capabilities using your own personally selected and purchased computer display monitor and keyboard.
- **Yaesu External Fully-Automatic Micro-Tuning Units.** Three modules available: A (160 m band), B (80 and 40 m bands), C (30 and 20 m bands)

Extended Warranties – See Page 27.

HF TRANSCEIVERS



FT-DX1200

NEW! HF / 50 MHz 100 Watt Transceiver

Continuing the Yaesu "FT DX" Legacy of Excellence established decades ago, the FT DX 1200 is designed for the casual operator as well as the competitive operator, whether you primarily participate in contests, chase DX, or enjoy field operating. The high frequency design technology it has inherited ensures "Best in Class Performance."

The FT DX 1200 provides up to 100 Watts on SSB, CW, FM, and AM (25 Watts carrier) and a rugged state-of-the-art highly-balanced receiver circuit configuration for top performance on today's crowded bands. Similar to the high-end "Yaesu FT DX" series, it uses 32-bit high speed floating point DSP for renowned proven performance.

A built-in 4.3-in TFT wide full color high resolution display with loads of information provides superior operability and visibility for the FT DX 1200 user. A spectrum scope located just below the LCD display gives the operator all the information needed to be at the right place on the band with the right receiver set-up to have a satisfying experience with a casual QSO chat or while digging out a rare desired weak signal contact.

Optional accessories are offered to provide very desirable additional features that make the FT DX 1200 a flexible true high performance platform for all hams – no matter what mode they choose to operate.

- General coverage reception from 30 kHz to 56 MHz.
- FM and AM – wide and narrow modes included.
- The main tuning knob, made from machined aluminum, has the solid feeling of a large fly wheel, while being nimble and smooth in operation. Each user may set his / her favorite torque feeling of the main dial rotation.
- External control (CAT) is possible using the serial port or the optional SCU-17 USB interface unit. This feature means the FT DX 1200 can be remotely controlled from a distant location.
- High performance triple-conversion receiver circuit structure enables elimination of unwanted signals through filters at each stage as well as optimized gain distribution.
- QRM and QRN rejection using IF shift, IF width, contour, IF notch, or CW audio peak filter.
- Selectable roofing filters of 3 kHz, 6 kHz, and 15 kHz.
- Three IPO settings – best signal reception during changing band conditions.
- CW features include CW zero-in display, CW spot, full break-in, adjustable CW "VOX" delay, CW mode reversible, separate front and rear key jacks, built-in electronic keyer, 4 channel message memory.
- Two antenna inputs.
- Optional fully automatic μ -tuning kit.
- Top performing receiver RF front end.
- Connected to a PC with a USB cable through the use of an optional SCU-17 interface.

**Extended Warranties Available
from HRO on Yaesu Radios**



FT-DX3000

HF / 50 MHz 100 Watt Transceiver

The FT DX 3000 is one of the long line of top-performing Yaesu FT DX transceivers. It inherits the design concepts of the FT DX 9000 and FT DX 5000 transceivers that have received high praise from all over the world by those pursuing the highest ideal of amateur HF communication equipment.

The FT DX 3000 exhibits phenomenal multi-signal characteristics first demonstrated in the top-rated FT DX 5000. Using the two signal dynamic range measuring method with 10 kHz signal separation, the FT DX 3000 performance is 108.5 dB, IP3 +37 dBm. With frequency separation of only 2 kHz between the desired signal and an interfering signal, the dynamic range measures 106 dB and IP3 +33 dBm.

With all its features and amazing performance at a truly affordable price, the FT DX 3000 is a terrific rig for home or a DXpedition.

Yaesu's latest, with amazing receiver performance from its FT-DX5000 heritage

- Covers all amateur radio bands from 160 to 6 meters.
- General coverage reception from 30 kHz to 56 MHz.
- 100 Watt output on all bands.
- FM and AM wide and narrow modes.
- IF DSP for QRM rejection.
- High speed spectrum scope.
- AF scope display.
- RTTY / PSK31 encoder / decoder (optional).
- 3 antenna connectors.
- Built-in high-speed automatic antenna tuner included. The antenna tuner uses LC switching. It has a large capacity 100 channel memory; the tuning data is automatically memorized to reduce tuning time when changing frequency.
- USB interface equipped.
- Wide viewing angle 4.3" LCD display.
- Independent frequency display with wider viewing angle and higher contrast.
- Signal output for an external receiver and 9 MHz IF.
- USB input for firmware updates.
- IF width and IF shift functions.
- Fifteen separate band pass filters.
- 3 kHz roofing filter for SSB and 300 Hz (optional) and 600 Hz roofing filters for CW.
- "Contour" tailors the received audio signal without changing the bandwidth.
- IF notch has attenuation characteristics of 70 dB or more.
- Digital noise reduction by DSP.
- Many CW features including CW audio peak filter, CW decode, CW spot, Auto zero-in display, full break in, four message memory (50 characters each) automatic "beacon" keyer mode and separate key jacks on the front and rear panels.
- Effective QRM rejection is achieved using 32-bit high speed floating decimal point DSP. The signal is processed with the high speed 300 MHz clock frequency.
- Microphone amplifier with parametric equalizer.
- IF DSP speech processor.
- 5 digital voice messages. Each memory channel is capable of storing up to 20 seconds of audio using the optional DVS-6.
- Dimensions 14.4" x 4.5" x 12.3" (W x H x D) and weighs only 22 pounds.
- External control (CAT) is possible using USB or Serial Port; this feature means the FT DX 3000 can be remotely controlled.

Compact HF + 6m Transceiver

FT-450D \$CALL

HRO Discount Prices

Now with
DSP-2
built-in



The Yaesu FT-450 provides world class performance in an easy to use, compact package. It employs state of the art IF DSP technology to bring an array of advanced features to the operator. Transmit frequency coverage includes 160 to 6 meters. The receive range is 30 kHz to 54 MHz. Power output is 100 Watts on HF and 6 meters. Operating modes include USB, LSB, CW, AM and FM.

- The rig is 9" W X 3.3" H X 8.5" D and weighs 7.9 pounds. Perfect for mobile or portable operation.
- Includes MH-31A8J hand mic, mic clip and DC power cord.
- Includes 10 kHz roofing filter right after the first mixer, providing narrow band selectivity protection of the IF & DSP stages – rarely found in rigs of this price range.
- 400 MHz built-in IF DSP.
- Built-in electronic keyer.
- LCD multi-function display.
- Built-in TCXO ± 1 ppm/hour (after warmup).
- AFC Fast-Slow-Auto-Off selection.
- Clarifier adjustment.
- Dedicated data jack for FSK-RTTY.
- CTCSS.
- User functions configurable by menu.
- Digital voice announcements of frequency, mode and S-meter.
- 500 regular memories and two voice memories.
- CW beacon function.
- Illuminated key buttons.

10m / 6m / 2m / 70cm FM

FT-8900R

\$CALL
HRO Price



The FT-8900 combines "traditional" 2m / 70cm local communications with the exciting capability of Sporadic-E or F2 DX on the 10m and 6m bands, allowing nationwide FM communication.

- Covers 28-29.7/50-54/108-180 / 320-480 MHz and 700-985 MHz (cellular blocked and non-restorable).
- Independent 2-channel, dual-receive, full duplex.
- High power output with 50 Watts on 10m / 6m / 2m and 35 on 70cm.
- Large, easy-to-read LCD display.
- Built-in duplexer.
- More than 800 memory channels. 799 "regular," 6 "home," 5 sets of band edge, and 6 "Hyper."
- Cross-band repeater capability.
- Versatile scanning.
- CTCSS / DCS built-in.
- User-programmable mike keys.
- Remote head mounting with optional YSK-8900.

The Smallest HF + 6m + 2m + 70cm

Now with
DSP-2 built-in

FT-857D

\$CALL

- HRO Discount
Price



Optional Remote Head

This HF/ VHF / UHF mobile transceiver provides base station performance from an ultra-compact package. The convenience of remote-head operation (optional YSK-857 separation kit) makes the FT-857D ideal for mobile or portable work.

The power amplifier uses bipolar transistor devices for low noise, low distortion and high reliability. Has an extensive cooling system with a thermostatically-controlled fan and aluminium die cast chassis.

The receiver front-end has a very low noise floor and wide dynamic range. Features a double conversion superheterodyne system (single on WFM) with the second IF at 455 kHz; bandpass filtering, device selection and gain distribution for strong signals. On VHF and UHF, the very low noise MOSFET preamplifier and active DBM mixer aid in working weak signals and rejecting intermodulation.

- Receive coverage 100 kHz to 56 MHz, 76-108 MHz, 420-470 MHz. Includes 60m.
- Transmits 160-6 m, 144-148 MHz, 430-450 MHz and 5167.5 kHz (Alaska emergency frequency on USA version).
- SSB, CW, AM, FM, packet (1200 / 9600 bps) operation.
- Power out: 100 W (160-6 m), 50 W (2 m), 20 W (70 cm).
- DSP bandpass filter, DSP auto-notch filter.
- DSP noise reduction, microphone equalizer.
- VHF / UHF features: versatile tone control selections, automatic repeater shift, Smart Search™, Spectrum Scope and ATS™.
- DXer features: IF shift, IF noise blanker, intercept point optimization, adjustable AGC, RIT. RF gain control, and VOX.
- CW features: built-in electronic keyer, CW message memory with beacon mode, CW pitch / sidetone control, and CW trainer.
- Easy data mode for operation on 1200 / 9600 bps FM packet,

RTTY, SSTV or PSK31. Rear panel 6-pin mini-DIN connector for each connection of these modes.

- 200 main memories, 8 character alphanumeric labels. 10 groups with 20 memories each.
- Large multi-color display.
- Battery voltage meter, TX meter selection, two antenna connectors, versatile scanning features. auto power off, time out timer and CAT system.

Options include:

- **ATAS-120:** Active Tuning Antenna System for mobile, portable or apartment / balcony use. Designed for use on the 7 / 14 / 21 / 18 MHz amateur bands. Can be used fully retracted on the 50 / 144 / 430 MHz bands.
- **Collins® Mechanical Filters:**
YF-122S 2.3 kHz SSB
YF-122C 500Hz CW
YF-122CN 300Hz CW
- **YSK-857** Separation Kit
- **TCXO-9** High Stability Reference Oscillator.

**HRO Offers Extended Warranties
for Yaesu Radios. See Page 27.**

HF TRANSCEIVERS WITH 6 M / 2 M / 70 CM

Portable All-Mode

HF + 6m + 2m + 70cm
Now with TCXO built-in

All Mode FT-897D

\$CALL
HRO Discount
Price



The innovative FT-897D rugged multiband portable transceiver covers the 160-10 meter bands (now includes 60m) plus 6m, 2m and 70cm. All mode operation includes SSB, CW, AM, FM and digital. With the internal batteries (optional) it will produce 20 Watts out. With an external 13.8 volt DC supply it will produce 100 Watts out.

- 200 memory channels with alpha-numeric tags.
- ATAS-120 / 100 compatible.
- Digital signal processing built-in.
- Bolt-on FC-30 automatic antenna tuner optional.
- IF shift control.
- IF noise blanker.
- AGC selector (auto / fast / slow / off).
- VOX operation.
- CTCSS/DCS encoders/decoders built-in.
- Collins® 2.3 kHz SSB mechanical filter and 500 Hz CW filter (optional).
- Spectrum scope.
- Automatic repeater shift.
- Smart Search™.
- Built-in 3 message memory keyer with adjustable pitch control.
- Automatic beacon mode.

Accessories:

- **FNB-78** internal 4.5 Ah NiMH battery **\$CALL**
- **FC-30** antenna tuner **\$CALL**
- **FP-30** internal power supply **\$CALL**
- **CD-24** 4-hour charge adapter for FNB-78 **\$CALL**
- **PA26B** charger for CD-24 **\$CALL**
- **ATAS-120** active tuning antenna **\$CALL**
- **MMB-80** mounting bracket **\$CALL**

5 Watt Backpack / HF Plus

FT-817ND
\$CALL – HRO Discount Price



Now with FNB-85 battery
1400 mAh NiMH + NC-72B Charger

- Fully self-contained battery-powered low-power amateur transceiver for portable, camping, or mountain use. Includes 6 m.
- Transmits on: 160-10 m, 50 / 144 / 430-450 MHz, plus Alaska Emergency Channel (5167.5 kHz).
- Receives: 100 kHz-56 MHz; 76-154 MHz; 420-470 MHz. (Exact frequency range may differ slightly.)
- Operating modes: USB, LSB, CW, AM, FM, WFM, digital (AFSK), packet (1200 / 9600 FM).
- Power output: 5 Watts SSB / CW / FM with 13.8V external DC; 1.5 W AM carrier; 2.5 W SSB / CW / FM with 9.6V Ni-Cd Pack or 8 "AA" batteries (AM: 0.7 W); up to 5 W SSB / CW / FM power (maximum) programmable via menu on NiMH / AA cells.

**HRO Offers Extended
Warranties on Yaesu Radios**

Ham Radio Outlet Accepts



Yaesu HF Specifications

Model	Frequency Range	Power Supply		Current Drain		Power Output				Mike Z ohms	Receive Circuitry	Sensitivity†	RIT / XIT Range	Audio Output	HRO Price
		AC	DC	Xmit	Rec	AM	FM	SSB	CW						
FTDX1200	30 KHz-60 MHz		13.8 VDC	23 A	2.1 A	25 W	100 W	100 W	100 W	200-10K	Triple	< .16 µV	±9.99 kHz	2.5 W	CALL
FTDX5000 Series	30 KHz-60 MHz	90-264		5.5 A		50 W	200 W	200 W	200 W	200-10K	Triple	< .2 µV	±9.99 kHz	2.5 W	CALL
FTDX3000	31 KHz-60 MHz		13.8 VDC	23 A	2.1 A	25 W	100 W	100 W	100 W	200-10K	Double	< .2 µV	±9.99 kHz	2.5 W	CALL
FT-897D	100 kHz-30 MHz 50-54 MHz 144-148 MHz 430-450 MHz	117 / 234**	13.8 VDC	23 A	1 A	20 W (batt)* 100 W 100 W+	20 W (batt)* 100 W +50 W @ 20 W%	20 W (batt)* 100 W +50 W @ 20 W%	20 W (batt)* 100 W+	200-10K	Double	< .2 µV	±9.99 kHz	2.5 W	CALL
FT-450D	30 KHz-56 MHz		13.8 VDC	22 A	1.5A	25 W	100 W	100 W	100 W	200-10K	Double	< .25 µV	±9.99 kHz	2.2W	CALL
FT-857D	See page 16		13.8 VDC	22 A	1 A	25 W 12.5 W 2m 5W 70cm	100 W 50 W 2m 20 W 70 cm	100 W 50 W 2m 20W 70 cm	100 W 50 W 2m 20 W 70 cm	200-10K	Double	< .2 µV	±9.99 kHz	2.5 W	CALL

† Sensitivity measurements for 1.8-30 MHz SSB,CW @2m %70cm *HF-6M battery +HF-6M AC/13.8VDC **Optional module required

Programming Kits

To Program HF:

ADMS-4AU FT-817
ADMS-4BU FT-857/897
ADMS-450 FT-450D
ADMS-950 FT-950
ADMS-DX3000 FTdx3000

To Program Mobiles:

ADMS-1900 FT-1900
ADMS-2H FT-8900
ADMS-2I FT-8800
ADMS-2J FT-2800
ADMS-2K FT-7800
ADMS-2900 FT-2900
ADMS-350 FTM-350AR
ADMS-7900 FT-7900

To Program Handhelds:

ADMS-1G VX-7R
ADMS-1J FT-60R
ADMS-250 FT-250
ADMS-270 FT-270
ADMS-VX3 VX-3R
ADMS-VX6 VX-6R
ADMS-VX8 (not VX-8GR)

Bluetooth®

BU-2

Bluetooth® Radio Unit

\$CALL – HRO Price

Yaesu has updated their BU-1. The new version provides 8 pairing channels and operates with 30 percent less power. Features PTT and VOX. Supported products: VX-8DR, FTM-10R, FTM-350AR and the new FTM-400DR.

**HRO
Extended
Warranties
Available**

**HRO ships
quickly from the
store nearest you.**



2 m / 440 MHz Dual Band

FTM-400DR \$CALL

HRO Discount Price



The Yaesu FTM-400DR mobile transceiver operates on 2 m and 70 cm. Select power of 50, 20, or 5 Watts on either band. Enjoy wideband receive from 108-470 and 800-999 MHz (less cellular).

Four scan modes: VFO, memory, programmable memory or selected memory. Each memory can store frequency, mode, tag, repeater information, tone, DCS, antenna squelch information, memory skip information and transmission output. Set the screen background to any of 5 colors (green, blue, orange, purple or gray). Capture images and video by connecting a USB camera (not supplied) and transmit and receive them. There is a port for a microSD card.

- Transmit bands - 2 m / 70 cm.
- Double conversion receiver.
- Large color display.
- 500 memories per band.
- Band scope.
- Dual reception.
- Extended receive.
- Internal clock / calendar.
- Four scan modes.
- Image receive / transmit.

- GPS / APRS®.
- 1000 memories in 2 banks.
- Spectrum scope.
- MicroSD slot.
- Twin RX.
- ARTS™ and Bluetooth®
- Bluetooth® optional.
- Optional voice guide speaks operating frequency and records received signals.

2 m / 440 MHz Dual Band

FT-7900R

\$CALL

HRO Price

The FT-7900R provides 50 Watts of power on the 144 MHz band and 40 Watts on 430 MHz. It is designed for simplicity of operation with high performance in the receiver section. The FT-7900R is ideal for the active Ham who has a need for simplex, repeater, or FM satellite operation on both bands, but without the complication of cross-band repeat capability.

- Wide frequency coverage.
- More than 1000 memory channels, each capable of storing a 6-character alpha-numeric label.



- YSK-7800 remote mounting kit (option).
- WiRES™ internet linking capability.
- One-touch "Hyper Memory" operation.
- High power output - 50 Watts of power output on VHF and 40 Watts on UHF.

2 m / 440 MHz Dual Band

FT-8800R

\$CALL

HRO Price

The FT-8800R provides easy operation, outstanding receiver performance and crossband repeat capability.

- Wide receiver frequency coverage of public safety, commercial, aircraft and government communications.
- Independent two channel operation operates as two radios in one.
- Large LCD display.
- High power output with 50 Watts on 2m; 35 on UHF.

- One-touch band-pattern.
- More than 1000 memory channels with 512 regular memories on each band.
- CTCSS and DCS tone systems.
- User-programmable microphone keys.
- Convenient remote-head mounting capability with the optional YSK-8900 separation kit.



MOBILES

2m Mobiles



FT-2900R
2 meters
\$CALL

The FT-2900R, King of the Mobiles, is a ruggedly-built, high-performance 75-Watt 2-meter mobile FM transceiver with outstanding receiver performance and 3 Watts of loud clean audio.

- 75 Watts of solid RF power with no cooling fan needed! Four selectable power output levels are provided: 75 / 25 / 10 / 5 Watts. Power levels may be stored in memory.
- 221 memory channels, including 200 "regular" memories, ten pairs of band-limit memories, and an instant-recall "Home" channel for a frequently-used repeater or simplex frequency. Memories can store repeater shift information, CTCSS/DCS data, power output level, scanning status ("Skip"), and alphanumeric labels.
- CTCSS and DCS encode / decode built in.
- Weather channels with "severe weather" alert.
- Wide / narrow deviation selection.
- Smart Search™.
- Versatile scanning capability.
- The FT-2900R includes a conveniently-located "Internet" key, for quick access to Internet-linked repeater systems. Internet repeater linking allows you to talk to other Amateurs throughout the world with outstanding voice signal quality. The "Internet" key may be configured to send either a single DTMF digit or a DTMF string, for operation on a WIRES™ (Wide-Coverage Internet Repeater Enhancement System) repeater.
- MH-48A6J DTMF direct access microphone.
- RF-level squelch.
- Interactive programming menu.
- Supply voltage display.
- Large 6 digit backlit LCD display.

FT-1900R
2 m plus
extended receive
\$CALL – HRO Price



The rugged, high-performance FT-1900R is a 55-Watt 2m mobile FM transceiver with outstanding receiver performance and crisp, clean audio. Optimized for ease of operation day or night.

- 55 Watts of power output, with "low power" settings of 25, 10, and 5 W.
- Four user-programmable "soft" keys on the microphone.
- 200 regular memories, ten pairs of band-limit memories, 8 memory banks, and a one-touch "Home" channel. Memory channels store repeater offset, CTCSS or DCS data, and can have a six-character label appended. Memories may be allocated into as many as eight banks for more efficient scanning.
- Multiple scanning modes.
- Large 6 digit backlit LCD display.
- 3 Watts of audio output.
- Receiver coverage 136-174 MHz, includes commercial, military, public safety, and marine communications.
- Built-in CTCSS / DCS encoder / decoder.
- Automatic repeater shift.
- Enhanced paging and code squelch system.
- Security password helps prevent unauthorized use.
- Severe Weather Alert feature (US only).
- Cloning.
- RF squelch, CW training.
- Adjustable TX deviation level.
- Automatic power off.

Extended Warranties. See Page 27.

HANDHELDS

Quad Band

VX-8DR
2 m / 220 MHz / 70 cm / 6 m
\$CALL

HRO Discount Price

The VX-8DR APRS® / GPS / Bluetooth® handheld transceiver includes the features and specifications of the VX-8R but also new expanded APRS® capabilities to meet the needs of even the most active APRS® user. The VX-8DR and VX-8R look the same and use the same accessories.

Key additional APRS® features of the VX-8DR compared to the VX-8R include:



Shown with
Optional
GPS

- Smart Beacons™ function: When using APRS® for position tracking, the beacon timing is automatically adjusted to your traveling speed and location to plot a smoother trace that matches your position and movement on a map.
- The number of station list memories has increased from 40 to 50.
- The number of APRS message memories has increased from 20 to 30.
- DIGI-PATH route indication function: The APRS® packet data includes digipeater routing info.
- Heads up compass display to the GPS Screen: Your traveling direction is always toward the top of the display.
- The message received LED flashing rate is selectable.
- The number of DIGI-PATH route settings is increased from 1 to 7.

Yaesu SDR Interface

RFspace
IF-2000
IF Interface



The IF-2000 IF interface board adds an IF output to the Yaesu FT-2000 and FT-950. This allows the interfacing of the transceiver to an RFSPACE Software Defined Receiver or panoramic adapter.

- Experience unprecedented bandwidth, speed, and resolution.
- Adds a 190 kHz wide waterfall / spectrum display.
- Adds two additional AM / FM / CW / SSB demodulators.
- Allows the recording of 190 kHz of band to the computer hard drive centered at the radio VFO frequency.
- Allows the monitoring of HF and 6 meter frequencies.
- Adds the ability to monitor the transmitter spectrum.

HRO Price \$189.99

Tri Band



VX-6R
2 m
220 MHz
70 cm

\$CALL

HRO Discount Price

The VX-6R is an easy-to-use little brother to the VX-7R, and is both rugged and submersible (JIS7: 30 minutes of submersion at depth of 3 feet).

- Covers 504 kHz to 998.99 MHz (with cellular blocked).
- 5 Watts of power 144 and 440 MHz bands (1.5 W on 222 MHz).
- FNB-80LI 1400 mAh lithium-ion battery pack standard.
- Emergency automatic ID (EAI) system.
- Enhanced paging and code squelch (EPCS).
- Wake-up battery saver.
- Security password.
- 900 memory channels with alphanumeric labels.
- One-touch memory access.
- CW trainer.
- Compact package measuring just 2.3" x 3.5" x 1.1" WHD.
- Oversized volume and squelch knobs.



FT-60R
2 m / 70 cm

Extensive Receive Frequency Coverage

Emergency Automatic ID for Search & Rescue



- Receives 108-520 MHz and 700-999 MHz (cellular blocked) for monitoring amateur, public safety, business, marine, aircraft, government communications.
- Tough die-cast, water resistant construction.
 - 1000 memories w/alphanumeric labels.
 - 5 Watt output.
 - CTCSS and DCS (encode/decode) with split tone; DCS encode only capable.
 - ARTS™.
 - One-touch to NOAA.
 - Nine DTMF auto-dial memories.
 - WIRES™ Internet linking.
 - Huge LCD display.
 - Two front panel programmable keys.
 - Automatic repeater shift.

Dual Band

VX-3R
2 m / 70 cm

\$CALL

HRO Discount Price



The world's smallest dual-band HT has up to 1.5 W of output power (up to 3 Watts w/external DC power supply - optional). It's your gateway to VHF, UHF, shortwave broadcast, marine and aircraft bands or WIRES-II™ Internet linking.

- Covers 500 kHz to 999 MHz (cellular blocked).
- 1286 memories.
- AF dual monitor function.
- 3 Watts out on 2 m when on external DC.
- Mechanical dial lock.
- Auto Range Transponder System (ARTS™).
- Exchange text messages with another VX-3R or FTM-10R.
- Frequency counter operation.
- Emergency automatic ID function..
- Optional "AA" battery case..
- CW learning and training feature.

HRO Offers Extended Warranties

FT-1DRS (Silver)
FT-1DRB (Black)
2 m / 70 cm

Dawn of Digital Communications
\$CALL

HRO Discount Price



Easy transfer of large amounts of data is the most attractive benefit of digital communication. The new FT-1DR uses 12.5 kHz C4FM FDMA digital modulation mode to enable high speed data communication capability and reliable voice communication with strong error correction performance. C4FM FDMA provides 9.6 kbps data baud rate speed.

NEW!

- 2 m / 70 cm.
- GSM (Group Short Message).
- Digital ARTS, USB connector.
- E-GPS, GPS data transfer.
- Wide receive capability.
- Large dot matrix LCD.
- Water spray resistant.
- Built-in GPS antenna.
- Three digital modes (V/D mode, voice FR mode, data FR mode) and an analog mode. V/D mode is voice and data communication in the same time frame.
- Automatic mode select function detects the receive signal mode.
- Illuminated keyboard.
- Real dual band operation (V+V / U+U / V+U).
- AF dual control.
- Snapshot picture taking capability with optional MH-85A11U speaker microphone.
- Preset receiver function -NOAA weather, marine, shortwave.
- 1200 / 9600 bps APRS® data communication.
- Micro SD card slot.
- Up to 5 Watts of reliable power output. There are four steps of power output, 5 Watts, 2.5 Watts, 1 Watt and 0.1 Watt.
- There are two types of Li-Ion battery. The optional FNB-102LI battery will provide up to 8 hours of typical 5 Watt operation.

SINGLE BAND HANDHELDS



FT-270R
2 meter

\$CALL
HRO Discount
Price

The FT-270R is a compact, high-performance FM handheld providing up to 5 Watts of RF power, along with big audio output (800 mW). Protected against water ingress to IPX7 specifications (submersion for up to 30 minutes at a depth of 3 feet). Features long operating time using the supplied 1400 mAh NiMH battery pack. 16-key direct keyboard frequency entry and direct DTMF input with quick, one-touch access to Yaesu's WiRES-II™ VoIP Internet linking system!

- TX: 144-148 MHz; RX: 136-174 MHz.
- 5 Watts with power levels hi/med/ low.
- ARTS™ System.
- Automatic repeater shift.
- 200 memory channels.
- Ten memory banks for channel allocation.
- CTCSS / DCS included.
- Smart Search™ memories.
- Ten memory banks for channel allocation.
- Adjustable TX deviation level.
- RF Squelch.
- Battery voltage display.



FT-250R
2 meter

\$CALL
HRO Discount
Price

Compact yet incredibly rugged, the FT-250R 2-meter handheld is derived from the Vertex commercial transceiver line. The 16-key FT-250R is constructed inside a die-cast aluminum housing, with a large, high-output speaker delivering 700 mW of loud audio for outside field environments. And the illuminated keypad provides easy viewing during nighttime operation. You need a radio that's as tough as your operating environment.

- Large backlit display.
- TX: 144-148 MHz; RX: 136-174 MHz.
- 5 W of stable RF power.
- Direct keypad entry.
- 209 memory channels.
- 7 character alphanumeric display.
- Optional ADMS-1F.
- Smart Search™ auto memory loading.
- ARTS™ System.
- Adjustable TX deviation level.
- Automatic repeater shift.
- RF squelch.
- TX / RX battery savers.
- Rugged water resistant case.



FT-277
70 cm

\$CALL
HRO Discount
Price

The FT-277R is a compact, high performance FM handheld providing up to 5 Watts of RF power, along with big audio output (800 mW). It is protected against water ingress to IPX7 specifications (submersion for up to 30 minutes at a depth of 3 feet).

It is supplied with a 1400 mAh NiMH battery.

The unit includes direct keyboard frequency entry and direct DTMF input along with quick one-touch access to Yaesu's WiRES-II™ VoIP internet linking system.

- Full 5 Watts FM 430-450 MHz.
- Large backlit LCD display.
- 200 memories.
- Submersible construction.
- Power saving circuit design.

**Extended
Warranties
Available**



FT-252
2 m

FT-257
70 cm

\$CALL
HRO Discount
Price

**Compact
with
High
Performance**

The FT-252 for 2 m and FT-257 for 70 cm are compact, simple-to-operate handheld radios that provide up to 5 Watts of RF power, along with loud audio output (800 mW). The radios are ruggedly constructed with a water resistant body and sealed tight to meet IPX5 protection requirements.

- Compact size – Case size 2.45" (W) x 4.74" (H) x 1.52" (D) without knob, antenna, and belt clip.
- Light weight – 9.9 oz with furnished battery, antenna, and belt clip.
- Large LCD display – new ergonomic design and large backlit LCD display for better operation.
- 5 Watts of reliable RF power – RF power output 5.0 W (High) / 2.0 W (Middle) / 0.5 W (Low) (@7.4 V).
- Loud audio – 800 mW of loud audio for noisy field operations.
- Wide frequency range – FT-252: RX 136 - 174 MHz; TX 144 - 148 MHz. FT-257: RX 400 - 480 MHz; TX 430 - 450 MHz.
- Password protection keypad / dial / PTT lockout.
- 200 memory channels for serious users.
- Smart search for selecting active channels.
- CTCSS (50 tones) and DCS (104 codes) encode / decode, with split tone and DCS encode-only capability.
- Nine DTMF auto-dialer memories.
- Lots of scanning mode flexibility: VFO / memory / PMS / dual watch.
- Emergency operation (alarm, flash, Morse code message).

HANDHELD ACCESSORIES	Model	60R	250R	270R 277R	VX- 3R	VX- 6R	FT- 1DR	VX- 8DR
Microphone Adapter	CT-44	*	*		*		*	
Microphone Adapter	CT-91			*		*		
Microphone Adapter	CT-131							*
VOX Headset	VC-24			*	*			
VOX Headset	VC-25	*	*		*		*	
Speaker/Microphone	MH-34B4B	*	*		*		*	
Speaker/Microphone	MH-57A4B			*	*			
Speaker/Microphone	MH-73A4B			*	*			
Speaker/Microphone	MH-74A7A							*
Ear Piece Microphone	MH-37A4B					*		
Ear Piece Microphone	VC-27			*	*			
Ear Phone	FEP-10	*	*		*			
Microphone adapter	CT-91			*	*			
DC/DC cigar adapter	EDC-5B	*	*	*		*	*	*
DC/DC adapter	EDC-6	*	*	*		*	*	*
Wall Charger 117 VAC	PA-48B	*	*	*	*	*	*	*
Rapid Charger	CD-15A				*			
Charger Cradle	CD-26			*				
Charger Cradle	CD-41							*
Desktop Charger	VAC-10B/C/U	*	*	*				
Desk Top Rapid Charger	VAC-370	*	*	*				
Battery 1400 mAh	FNB-80LI				*			
Battery 1000 mAh	FNB-82LI				*			
Battery 1300 mAh 7.4 V	FNB-83	*	*	*				
Battery 1100 mAh 7.4 V	FNB-101LI						*	*
Battery 1800 mAh 7.4 V	FNB-102LI						*	*
Battery case AA batteries	FBA-23				*			
Battery case AA batteries	FBA-25	*	*	*				
Battery case AA batteries	FBA-37				*			
Battery case AA batteries	FBA-39						*	*
Cloning Cable	CT-27	*	*		*			
Cloning Cable	CT-134							*
Ant Adapt SMA - BNC	CN-3	*	*	*	*	*	*	*
Radio Case (soft)	CSC-91				*	*		
Radio Case (soft)	CSC-92				*	*		
Radio Case (soft)	CSC-93						*	*
Radio Case (soft)	CSC-95						*	*
Barometric pressure sensor	SU-1				*			
GPS Antenna Unit	FGPS-2							*

Extended Warranties available for Yaesu

Yaesu Handhelds

Model	Frequency	Mode	Pwr Supply	Power Out	Current Transmit	Drain Receive	Sensitivity	Height in (cm)	Width in (cm)	Depth in (cm)	Weight oz (g)	HRO Price
FT-60R	2m/70 cm	FM	7.2 VDC	5 W	1.5 A	125 mA	.16 μ V / 12dB	4.3 (10.9)	2.3 (5.8)	1.2 (3.0)	13.5(370)	CALL
VX-3R	2m/70 cm @//	FM	3.7 VDC	1.5W††	1.3 A	120 mA	.16 μ V / 12dB	3.2 (8.1)	1.9 (4.7)	0.9 (2.3)	4.6(130)	CALL
VX-6R	2m/70 cm @#	FM	7.4 VDC	5 W	1.5/1.6/1.8 A	150mA	.16 μ V / 12dB	3.4 (8.7)	2.3 (5.8)	1.1 (2.8)	9.5(270)	CALL
VX-8DR	50/144/220/440MHz#@	FM/AM	7.4 VDC	5 W ***	1.9 A	240mA	.16 μ V / 12dB	3.7(9.5)	2.4 (6.0)	0.9(4.2)	8.5(240)	CALL
FT-1DR	2m/70 cm	FM/AM	7.4 VDC	5 W *	1.7 A	240mA	.16 μ V / 12dB	3.7(9.5)	2.4 (6.0)	1.1(2.8)	9.3(265)	CALL
FT-270R	144-148 MHz#	FM	7.2 VDC	5 W	1.5 A	165mA	.16 μ V / 12dB	4.7 (12.0)	2.4 (6.0)	1.3 (3.2)	13.8 (390)	CALL
FT-277R	430-450 MHz	FM	7.2 VDC	5 W	1.5 A	165mA	.16 μ V / 12dB	4.7 (12.0)	2.4 (6.0)	1.3 (3.2)	13.8 (390)	CALL
FT-250R	144-148 MHz#	FM	7.2 VDC	5 W	1.3 A	130mA	.16 μ V / 12dB	4.3 (10.8)	2.3 (5.8)	1.1 (2.65)	12.4 (352)	CALL

*Power output can be increased depending on the battery pack selected. #Extended Rx range @Cell phone blocked. **2 and 6m 4.5 W UHF.
††1.5 W 2m/1 W UHF. ***1.5 W on 220 MHz

ACCESSORIES

HF Amp & Power Supply



Quadra System

\$CALL
HRO Price

Here's all the linear amplifier you should need for operation on both HF (160 - 15 meters) and 6 meters. It is designed for automatic band switching with the FT-450, FT-950, FT-2000, FT-1000D, FT-1000MP, FT-920, FT-990 and the FT-900 HF radios. The amp features 8 MRF150 power MOSFET transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC.

The included external power supply, the VP-1000, allows for easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the power supply voltages. At 220 VAC there is 1000 Watts out on HF and 500 Watts on 6 meters. At 117 VAC the output is 500 Watts on HF. The amplifier comes with a built-in high speed antenna tuner with four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.

Power Supplies

FP-1030A

\$CALL

HRO Price



The FP-1030A is a regulated linear supply at 25 amps and includes meters.

FP-1023A

\$CALL - HRO Price

The FP-1023A has 23 amps continuous and 25 intermittent. This low-profile switching power supply operates on 110 or 220 VAC.

DUAL BAND RADIOS

Amateur Dual-Band Radios



2 m / 70 cm
KG-UV3D – 2 / UHF

2 m / 220 MHz
KG-UV3D – 2 / 220
\$CALL



- Wide receive range: 136-174 / 420-520 MHz or 136-174 / 220-260 MHz.
- 128 memory channels.
- Dual display w/ full keypad.
- 3-hour desktop charger.
- PC or keyboard programmable.
- Built-in flashlight.
- 18 month limited warranty on the radio and 6 month limited warranty on the included battery and battery charger.
- On 2 / 220 model: 2 dual band antennas (219-239, 240-280 MHz).
- On 2 / 440 version, a single dual band antenna.
- Dual alpha numeric, backlit display with channel name.
- Selectable high / low power settings (2 meters: 5 W high / 1 W low; 220 or 440 model: 4 W high / 1 W low).

- Digital FM radio (76-108 MHz).
- Wide / narrow bandwidth selection (25 or 12.5 kHz).
- Programmable by computer or keypad.
- Radio to radio cloning with optional WXCLN cable.
- 105 groups DCS / 50 groups CTCSS.
- CTCSS encode / decode.
- Busy channel lockout and selectable transmit over timer.
- Multiple scan modes.
- High contrast white backlit keypad.
- 1700 mAh Li-ion battery back standard with up to 13 hours operating time.

Wouxun Accessories

Model	Description	HRO Price
WXHCB	1700 Li-ion Battery	\$28.99
WXAAB	AA Battery Pack	\$11.99
WXUSB	USB Programming Cable	\$16.99
WXDSC	Dual Slot Charger w/ 2nd Battery Slot	\$24.99
WXSPK	Economy Speaker Mic	\$16.99
WXRSM	Heavy Duty Speaker Mic	\$39.99
WXLQE	Listen Only Earpiece for Speaker Mics	\$12.99
WXGHK	G-Hook Lapel Mic	\$18.99
WXAET	Covert Clear Acoustic Earphone Mic	\$18.99
WXCHD	Heavy Duty Nylon Case	\$29.99
WXCAR	12 VDC Car Charger	\$9.99
WXBTE	Battery Eliminator w/Cig Lighter	\$14.99
WXRC6	6-Unit Drop-in Rapid Charger	\$149.99
WXGAT-RV	High Gain 2m/440 Antenna (Rev SMA)	\$22.99
WXGAT-ST	High Gain 2m/440 Antenna (Std SMA)	\$22.99
WXSTB-RV	Dual band Stubby Antenna (Rev SMA)	\$19.99
WXSTB-S155	Dual band Stubby Antenna (Std SMA)	\$18.99
WXUHF	Reverse SMA to UHF (SO-239)	\$6.99
WXBNC	Reverse SMA to BNC	\$8.99
HS05	Std SMA to UHF (SO-239)	\$14.95
WXDHM	Over the Ear Headset (single Ear)	\$14.99
RPS-KGUV123	RT Systems Software & Cable (3D)	\$49.95
RPS-KGUV6	RT Systems Software & Cable (6x)	\$49.95

Commercial Radios



DB-750X
Dual Band VHF / UHF
750 Channel
Commercial Mobile
Radio



All of the features you want in a commercial mobile at an affordable price. Ideal for fire, police, FEMA, CAP, security patrols, business communications, schools, construction crews, universities, and other organizations that have FCC licensed frequencies. Includes 2.5 kHz channel step for FCC 2013 narrowband compliance.

The radio features narrow band transmit (2.5 kHz) except on the Amateur bands (selectable wide or narrow RX), true dual-band receive (V+V, U+U, V+U, U+V), wide RX / TX 136-174 / 400-490 MHz, AM aircraft receive 108-136 MHz, and user selectable multi-colored LCD display.

Since this is a Commercial Land Mobile Multi-band radio, the DB-750X ships keyboard locked. The RPS-DB750X-USB programming software kit is required to initially unlock and program this radio before use.

18 month limited warranty on the radio and 6 month limited warranty on the included radio battery and battery charger.

- 750 memory channels.
- 10 memory banks (with bank linking).
- 7 character alphanumeric display.
- Dual receive operation.
- Wide band (5.0 kHz) operation

- for Amateur frequencies.
- Narrow band (2.5 kHz) operation for land mobile frequencies (FCC Part 90).
- User selectable multi-colored LCD display.
- Built-in CTCSS / DCS per channel.



VHF / UHF
Commercial Dual Band
2 m / 70 cm
KG-UV6X
\$CALL



- Wide RX / TX Range.
- Receives 136-174 / 370-512 MHz.
- Transmits 136-174 / 400-512 MHz.
- 200 memory channels.
- Includes 1700 mAh Li-ion battery.
- Dual display w/ full keypad.
- Includes 2 hour dual-slot rapid charger.
- PC or keyboard programmable.
- Built-in flashlight.



HM-12 Designed for Hams

The high output full range "Genesis" dynamic element in the HM-12 is designed to work with just about every amateur radio low impedance transmitter. The element is mounted in a unique internal shock mount and exhibits nearly -35 dB of rear rejection, which reduces background and ambient noise from the transmitted signal.

The "soft touch" PTT switch is wired to pins 3 and 4 for transmitter control with the microphone signal fed to pins 1 and 2 of the 4 pin XLR. The Heil HM-12 uses Heil CC-1 connecting cables.

This microphone has a unique internal windscreen plus an external foam windscreen. It has the 5/8" X 27 microphone clip designed for our booms and stands. Frequency response: 80 Hz-14 kHz @ -55 dB. Satin black finish.
HRO Price \$CALL



PR-781

This is a truly remarkable dynamic microphone! From the Amateur Radio division of Heil Sound, Ltd., comes the PR 781, a professional-quality dynamic cardioid microphone that is specifically designed for use with most elite-class transceivers from Kenwood, Yaesu, Ten Tec and Icom. Heil engineers were requested by Icom to develop a very special microphone package for their new IC-7800 radio. They didn't want just a microphone; they wanted a SUPER microphone for a super radio, and the Heil PR 780 was born.

The PR 781 is an improvement on the popular PR 780; it's a beautiful performer into just about any microphone input, such as TS 870, 950, ICOM Pro 1, 2, 3, 7800, Yaesu Mk 5, MP, 2000, and 9000. Using one of the dynamic elements from the Heil broadcast division, the PR 781 offers a wide frequency response, while keeping that traditional Heil Sound articulation of the speech pattern. Its clarity and fullness are without peer in the Amateur Radio world. The PR 781 comes with the SM-3 mount.
HRO Price \$CALL

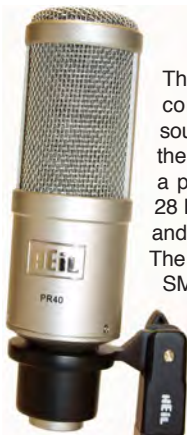


Heil PR40

The PR 40 was designed for commercial broadcast, live sound and recording. It features the Heil dynamic element with a perfectly flat response from 28 Hz all the way up to 18 kHz and has gorgeous articulation. The PR 40 is shipped with the SM-3 5/8" X27 mount and a lined metal carrying case.

All the PR Series microphones require additional cables to interface with your transceiver.

HRO Price \$CALL



Heil PR30

The PR 30 was designed for commercial broadcast, live sound and recording. It has comparable sound to the finest condenser microphones because of its wide frequency response, excellent transient response and low IMD. The PR 30 comes standard with the SM-3 5/8" X27 mount. All the PR Series microphones require additional cables to interface with your transceiver.

HRO Price CALL



Pro Connector Cables

This 8 ft long cable connects the Classic Pro, Pro, and Heritage microphones to your 8-pin Kenwood, Yaesu, or Icom transceiver. Made with Heilwire to help reduce RFI and noise. Pig tail easily connects to HS-2, FS-2 or FS-3.

CC-1 XLR Y (Yaesu cable)	\$39
CC-1 XLR BAL (FT-950, FTdx9000)	\$39
CC-1 XLR I (Icom cable)	\$39
CC-1XLR K (Kenwood cable)	\$39

For Icom Radios

ICM Salvation for Icom Users!

The ICM microphone is a high-quality microphone for early Icom transceivers. It features a high-quality, high-gain condenser element that provides full-bodied audio with plenty of drive to match up with the low-gain audio systems of the earlier Icom rigs. It also works great with the higher-gain "Pro" radios and IC-7800 from the current Icom line.

HRO Price \$CALL



PR20 / PR20UT

The PR 20 was designed for commercial broadcast, live sound and recording. With a smooth, flat response over a wide frequency range, it uses the Heil Pro Series microphone element for excellent transient response, low IMD and reduced proximity effect.

The PR 20 comes standard with 3 mesh screens (black, gold and silver). All PR Series microphones require additional cables to interface with your transceiver.

HRO Price \$CALL

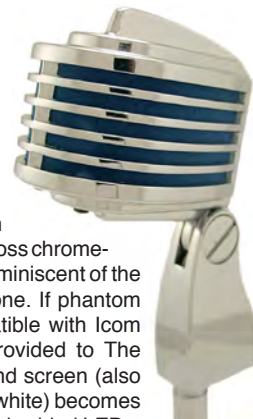
PRO20UT is the PR20 without packaged extras. Includes silver mesh grill, foam wind screen, and mic clip in padded vinyl zipper bag.
HRO Price \$CALL



The Fin™

The Fin™ utilizes the PR-20 element so popular in the professional audio realm. It is housed in a gorgeous high-gloss chrome-finish enclosure reminiscent of the Heritage microphone. If phantom power (not compatible with Icom transceivers) is provided to The Fin™, the blue wind screen (also available in red or white) becomes illuminated by 4 embedded LEDs.

HRO Price \$CALL



Spotlight Series

These professional quality, dynamic, cardioid PR20 microphones are ideal for broadcast recording and live sound. They employ a smooth, flat response over a wide frequency range and have excellent transient response. Choose a gorgeous finish in pearlized red, pink, or white enamel. The Spotlight Series requires additional cables to interface with your transceiver.

HRO Prices:	Pink Pearl 20	\$199
	Red Pearl 20	\$199
	White Pearl 20	\$199



Call to Hear About Manufacturers' Special Offers

MICROPHONES



Handi-Mics

The Handi Mic is an ultra-compact hand microphone utilizing a special open Sorbothane® shock mount, yielding superior audio compared to the standard microphones offered by the radio manufacturers. The Handi Mic is available with the HC-4 "DX Dream Machine" element, or the "iC" element designed for Icom rigs; a special "Pro" version is also available, with a wide-frequency "broadcast" element that sounds great on FM mobile rigs. **HRO Price CALL**



Dash hanger

Model	Element	PTT
HM-4	HC4 DX Dream Machine	Yes
HM-iC	Electret for most Icom	Yes
HM-PRO	Wide range broadcast	Yes
HM-PRO+	Used on live sound stage & as an interview microphone	No*

* 3 pin connector

Switches



HS-2 PTT Hand Switch

Heil's high quality hand switch made for P.T.T. operation is shaped to fit your hand naturally and comfortably. Comes with a 6 foot cable that plugs into the AD-1 or CC-1 adapter. **HRO Price \$32**

FS-3 Single Circuit Footswitch

Use the FS-3 to control the transmit/receive function of your amateur radio. An 8-foot shielded cable is terminated with a commercial 1/4" plug that connects into the Heil CC-1 and AD-1 cable system. **HRO Price \$26**



FS-2 Dual Footswitch

The FS-2 is a unique dual-action foot-switch ideal for the modern Ham station. The FS-2 provides two sequenced micro-switches, one each for connection to your transmitter and your linear amplifier; when you press down on the footswitch, the amplifier's switch is engaged first, followed immediately by the switch for the radio, and when you let up the reverse sequencing takes place. This provides safe T/R switching for both radio and amplifier without need for a control cable between the two units. **HRO Price \$45.00**



Mounts



CB-1 PTT Classic Base

Beautiful reproduction of a 1930 RCA microphone base. Heavy three pound cast steel with stainless trim. 3" chrome mount accepts 5/8" X 27 hardware. **CB-1 PTT w/ PTT switch HRO Price \$78.00**



SM-1 Shock Mount

The ultimate mount for Pro, HM-10 or iCM can be used on all booms or stands. 8 point flexible suspension supports and isolates the Heil microphone from mechanical vibrations. 5/8" X 27 standard threads will mount onto microphone stand and boom arms. (Shown with the GM-5 microphone.) **HRO Price \$80.00**

PRSM Shock Mount

This flexible support system helps suppress low-frequency rumble by damping vibrations. The SM-2 fits large-diameter microphones including the PR-30 and PR-40. Used on all booms or stands with 5/8" threads.



PRSM-B black finish. HRO Price \$CALL

PRSM-C chrome finish. HRO Price \$CALL

FL-2 Flange Mount

With brass insert. Fits the PL-2T, SB-2, HB-1. **HRO Price \$28**



DT-1 Desktop Flush Mount

Allows PL-2T, SB-2 and HB-1 to slip into 1-1/2" hole drilled into desktop. **HRO Price \$35.00**

WM-1 Vertical Surface Mount

The WM-1 is a unique mount for the Heil booms that allows them to be mounted on a vertical surface. The brass insert of the WM-1 ensures smooth, perfect fit. **HRO Price \$22**



Booms



PL-2T Studio Boom

The PL-2T "Topless" boom is a unique cantilevered mount that gives your station a professional-looking solution for mounting your base station microphone. It features a unique channel with a removable cover that lets you tuck the microphone cable away for a clean, clutter-free installation. The PL-2T accepts all Heil Sound industry-standard 5/8X27 microphone mounting clips. **HRO Price \$120.00**

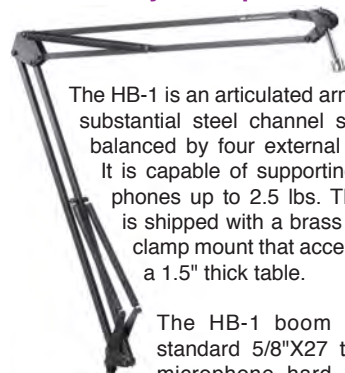


microphone not included

SB-2 Small Boom

Extends from 10 to 24 inches with angle adjustments for positioning. Standard 5/8 X 27 thread. Includes Teflon® stem adapter to mount into all of the Heil PL2T mounts. Comes with the C clamp. **HRO Price \$63.00**

HB-1 Economy Microphone Boom



The HB-1 is an articulated arm of very substantial steel channel structure, balanced by four external springs. It is capable of supporting microphones up to 2.5 lbs. The HB-1 is shipped with a brass lined 'C' clamp mount that accepts up to a 1.5" thick table.

The HB-1 boom accepts standard 5/8"X27 threaded microphone hardware. It will fit all of the brass lined Heil mounting accessories. The threaded chrome stem can be secured into its needed position by tightening the thumb screw. **HRO Price \$70.00**

RS-1 Riser

12" Riser allows you to mount the PL2T behind the transceiver or console and lift the base 12" from the table. Works with SB-2, PL-2T or HB-1. **HRO Price \$28**





Pro Set Elite

This is the ultimate boomset for commercial sportscasters, podcasters, and amateur radio operators using the new HC-6 wide response microphone element. It features dual side, high efficiency speakers on acoustically tuned chambers for high rejection of outside noise. The unit folds up for easy transportation and storage.



There are two models:

Pro Set Elite 6 Uses HC 6 full range broadcast dynamic element for commercial broadcast applications. Requires AD-1 adapter. **HRO Price \$CALL**

Pro Set Elite IC Uses the specially designed high performance electret condenser which was designed for low mic inputs used on many Icom transceivers. Requires 5 volts DC phantom power as provided by all Icom rigs. **HRO Price \$CALL**

Proset 3



Proset 3 Stereo Headphones HRO Price \$CALL

The Pro Set 3 demonstrates how Bob Heil's ability to listen leads to Heil Sound Ltd. building high quality professional sound products. The fact that the Heil Pro Set 3 looks so good is an added bonus.

The Pro Set 3 headphones will work for all types of music recording, internet and commercial broadcasting, and, of course, ham radio. This professional, lightweight headset can be worn comfortably for hours on end without producing "headphone fatigue" while providing accurate sound re-creation.

With the Pro Set 3 headphones you get three detachable cables: A 1.8 M flexible straight cable, a 1.8 M straight cord with mating iPhone/iPod compatible 3.5mm plug, and a 3 M coil cord – all twist lock terminating in a 1/8" (3.5mm) professional gold plated screw-on 1/4" (6.3mm) adapter. From 10Hz all the way to 22kHz, the Heil Pro Set 3 headphones have got you covered.

Microphone Pre Amp

USBQ



The Heil USBQ is a professional quality, low noise microphone pre amplifier complete with two band shelving equalizers, on-board headphone amplifier, and D/A converter in a compact, portable package. Not just an adapter, but a true single channel mic pre amp complete with balanced XLR input mic level, switchable phantom power, bass and treble controls, and adjustable headphone output level. The USBQ is for professional recording, commercial broadcasts and communicating over the internet. No batteries, just plug into USB and enjoy. **HRO Price \$90.00**

HEADSETS

Prosets

CALL for HRO Prices

Heil Sound Pro Sets are lightweight, versatile boom microphone / headsets designed for comfort, durability, and, above all, performance. The Pro Sets now include Heil Sound's exclusive phase reversal technology, which allows the user to "move" the incoming signal by engaging the phase-reversal switch to significantly improve copy in a tough DX pile-up.

The Pro Set is available in four versions: the **Pro Set 4** (PS-4) is supplied with the HC-4.*



The **Pro Set iC** (PS-iC) utilizes the Heil Sound "iC" condenser element specially designed by Heil Sound for compatibility with the low gain found on many Icom transceivers' mic amp stages. The PS-iC is also shipped with the AD-1iC adapter cable (the PS-4 and PS-6 require an optional adapter cable so as to match the Pro Set to your transceiver's mic jack requirements.)

The **Pro Set 6** (PS-6) utilizes the new HC-6* element, designed for commercial broadcast applications.

Finally, the **Pro Set Media Pro** is supplied with a high-level condenser element and two 1/8" plugs, for applications requiring connection of a headset/boom mic to a computer's sound card.

* Requires adapter

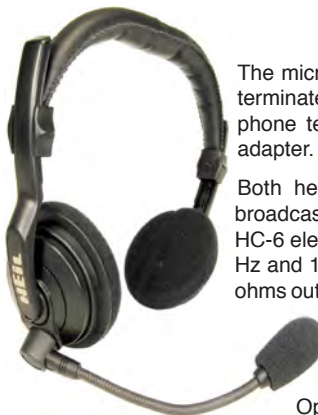
Accessories:

BAG -1 Leatherette travel bag for Pro Set and Pro-Plus.
HRO Price \$28.95

BAG -2 Leatherette travel bag for Quiet Phone, Traveler, & BM Series.
HRO Price \$22.95

High Performance Headsets

ProMicro Headsets



The microphone audio for the Pro Micro series terminates into a 1/8" male plug while the headphone terminates into a 1/8" stereo plug with adapter.

Both headsets are designed for commercial broadcast applications and are outfitted with the HC-6 element. The -3 dB points are fixed at 100 Hz and 12 kHz with sensitivity of -57 dB at 600 ohms output impedance (centered at 1 kHz). The headphones adjust by bending the stainless steel piece that is inside the black padded headband.

Optional accessories include the AD-1 microphone adapters (sold separately) that will interface with popular transceiver inputs. The FS-2 foot switch and HS-2 hand switch connect to the PTT of the rig.

Pro Micro PMD-6

**Dual-sided
HRO Price \$CALL**

Pro Micro PMS-6

**Single-sided
HRO Price \$CALL**



MICROPHONES / HEADSETS



SPM-300EB



SPM-400A



SPM-100



EH-389SC



SPM-2100

PRYME[®]
Radio Products



SPM-800

Speaker Microphones, Earphones, Lapel Microphones, and Over-the-Ear Boom Microphones

Pryme Radio Products has a product to meet any portable communication need. They offer small speaker microphones (the SPM-100 series) and full sized microphones (the SPM-2100). Users on the go will appreciate ultra comfortable lapel microphones (SPM-200) and the patented over-the-ear boom microphones (SPM-400). For high-noise environments, use a noise resistant throat microphone (SPM-500). Users that need "low profile" communications should check out the flesh-colored "palm microphone" (SPM-700) which can easily be concealed.

Pryme Microphones

Model	Description	HRO Price
SPM-100	Speaker / microphone for ADI, Icom, Standard, Yaesu	\$29.95
SPM-101	Speaker / microphone for Kenwood	\$32.95
SPM-102	Speaker / microphone for FT-60R/FT-250/VX-8GR	\$32.95
SPM-142	Speaker / microphone for VX-6R/VX7R	\$29.95
SPM-300EB	Lapel mic with ear hook for ADI, Icom, Yaesu, Alinco	\$40.95
SPM-301EB	Lapel microphone and ear hook for Kenwood	\$39.95
SPM-302EB	Lapel microphone for FT-60R/FT-250/VX-8GR	\$29.95
SPM-342EB	Lapel microphone with ear hook for VX-6R/VX-7R	\$41.95
SPM-400A	Earpiece with mini boom microphone for ADI, Icom, Yaesu	\$34.95
SPM-800B	In-helmet speaker mini boom for ADI, Icom, Stanadard, Yaesu	\$70.95
SPM-801B	In-helmet speaker mini boom for Kenwood	\$70.95
SPM-802B	In-helmet speaker mini boom for FT-60R/FT-250/VX-8GR	\$69.95
SPM-800F	In-helmet speaker / microphone for ADI, Icom, Stanadard, Yaesu	\$59.95
SPM-801F	In-helmet speaker / microphone for Kenwood	\$68.95
SPM-802F	In-helmet speaker / microphone for FT-60R/FT-250R/VX-8GR	\$69.95
SPM-2101	Heavy duty speaker/microphone for Kenwood, Wouxun	\$39.95
SPM-2102	Heavy duty speaker/microphone for FT-60R/FT250R	\$49.95
SPM-2142	Heavy duty speaker/microphone for VX-6R/VX-7R	\$39.95

HRO Extended Warranty Program

HRO's Optional Extended Warranty Program extends the original manufacturer's limited warranty on most Amateur Radios, but not for attendant accessories (like batteries, microphones, speakers, etc.) A period of one (1) or two (2) additional years can be selected, and all limitations, exceptions, and exclusions of the original manufacturer's warranty apply during this extended period.

The HRO Extended Warranty Program must be purchased within 30 days of the date the original product(s) was purchased, and is only available to the original purchaser of the relevant product(s). Neither the benefits nor coverage of this program are assignable or transferable, and verification that the Extended Warranty Program was purchased, product purchase date and serial numbers may be required of the buyer.

The HRO Extended Warranty Program starts at the conclusion of the new product original warranty period, and all Extended Warranty claims must be processed by HRO directly via any one of our twelve store locations.

Further details are available online at www.hamradio.com.

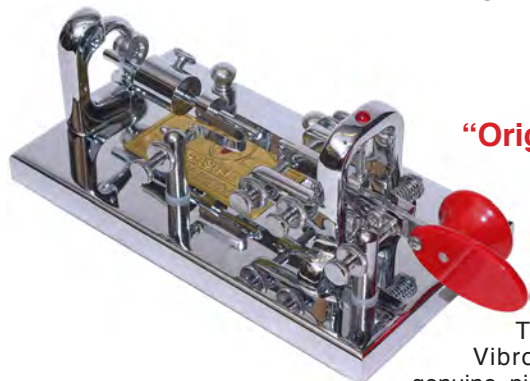


"Vibrokeyer"

The Vibrokeyer is designed for those who prefer a non-iambic paddle. The single lever paddle imitates the automatic dots and dashes of the electronic keyer with the same motion used to operate the "Bug."

Vibrokeyer Deluxe: Highly polished decorative chrome base with bright chrome top parts. Silky smooth movements are jeweled as in fine Swiss watches. **HRO Price \$189.95**

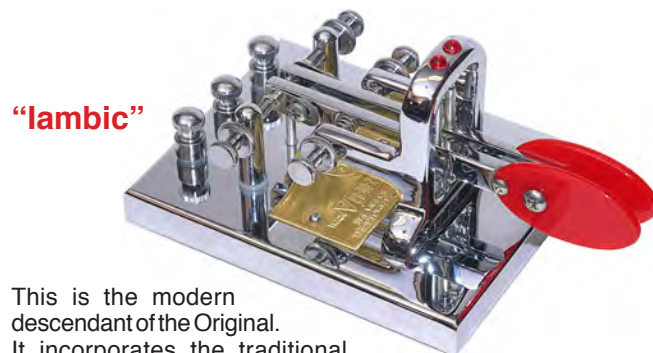
Vibrokeyer Standard: A neat, crisp black textured finish base with bright decorative chrome parts. Non-jeweled movement. **HRO Price \$149.95**



"Original"

The Original Vibroplex is a genuine piece of history. First patented in 1894, the Original is still manufactured today using tools and dies very similar to those used by its inventor, Horace G. Martin. Modern-day operators can put their fist to the same equipment as the Western Union and railroad operators of old.

Original Deluxe pictured: **HRO Price \$249.95**



"Iambic"

This is the modern descendant of the Original. It incorporates the traditional Vibroplex look for use with modern electronic keyers.

Iambic Deluxe: Same as Presentation but without the 24K gold plated brass plate. **HRO Price \$189.95**

Iambic Standard: A neat, crisp black textured finish base with bright decorative chrome top parts. **HRO Price \$149.95**



"Vibrocube"

The Vibrocube registers just under 6 pounds on the scale. It is a large paddle that stays in place on the desk and accommodates a large hand comfortably.

The base is USA-forged cold-rolled steel, upper components are zinc, steel and brass. The finger pieces are hard red acrylic. Instead of magnetic tensioning, we use a spring loaded method which provides a greater range of possible tension settings than magnets allow.

Vibrocube Standard: **HRO Price \$219.95**

Vibrocube Deluxe: Like the Standard version with jeweled upper and lower trunion screws, an all-chrome base and all-chrome top components **HRO Price \$289.95**

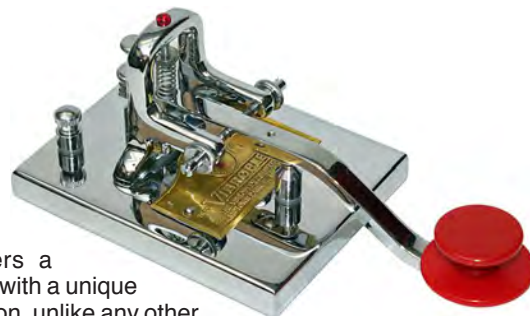


"Brass Racer"

The Brass Racer keys are unique in that there are NO springs in the design. They are crafted from solid brass and mounted on a base of polished hardwood. Tension on the paddle is infinitely adjustable by the use of magnets.

Brass Racer Iambic: This iambic paddle is designed for use with an external keyer or the keyer in your radio. The Triangle Brass base is mounted on polished hardwood. **HRO Price \$139.95**

Square Brass Racer: This key is a departure from our traditional style. A distinctive design of brushed lacquered SQUARE brass mounted on polished hardwood. **HRO Price \$144.95**



"Straight Keys"

Vibroplex® offers a STRAIGHT key with a unique mechanical action, unlike any other straight key that has ever been manufactured.

Straight Key Deluxe: Highly polished chrome base with decorative chrome top parts. **HRO Price \$189.95**

Straight Key Standard: A neat, crisp black textured finish base with bright chrome top parts. **HRO Price \$149.95**

KENT



Kent Paddles



Kent Straight Key

These paddles offer a smooth feel with sealed ball bearings. Precise gap adjustments with knurled heads on fine pitched screws and locking nuts. Made from solid brass within a permanent brass housing.

Twin Paddle	(TP-1)	\$164.95
Single Paddle	(SP-1)	\$159.95
Straight Key	(SK-1)	\$154.95

WEST MOUNTAIN RADIO



TOUCHKeyer

A touch-operated twin paddle key with a built-in advanced memory keyer. Just touch the paddles to send perfect CW. The TOUCHKeyer has no moving parts, no mechanical adjustments, no clicking sounds. **HRO Price \$119.95**

Wall Clock

GEOCHRON

A "must item" for a First Class Ham Shack

Global Time Indicator

Size: 34" x 22" x 5"

Geochron is a true global time indicator. At any moment, Geochron displays the correct time everywhere in the world – the week, date, the sun's declination and distribution of daylight and darkness on the earth's surface. Geochron is available in four (4) models and a multitude of housing finishes and trim colors. Packaged for "drop shipment" anywhere in the world via UPS. Geochron can be surface mounted on the wall like a picture or recessed using optional mounting brackets. **Call HRO for special pricing opportunities.**



Hex Key

Gold plated silver contacts. Molded acrylic finger paddles. Polished chromium parts. Magnetic tension adjustment and adjustable contact spacing. Black powder coated steel base. **HRO Price \$219.95**



**BY Series
Iambic Paddles**

You will enjoy the smooth, precise action of a Bencher paddle with any iambic keyer. These paddles feature a heavy steel base, gold plated silver contact points, non-skid feet, stainless steel adjustable spring, self-adjusting needle bearings, and large acrylic finger paddles.

HRO Prices:

BY-1	Black	\$119.95
BY-2	Chrome	\$154.95
BY-3	Gold	\$329.95
BY-4	Gold/Blk	\$199.95

RJ Series Hand Keys

The "RJ" hand keys have an advanced American-style design derived from the telegraph keys that won the west, yet with modern features like Oilite bearings, a solid navy knob, gold-plated solid silver contacts, full locking adjustments of all tension and spacing parameters, and Bencher quality materials throughout. These keys are ideal for the new amateur just mastering code as well as the old time brass pounder anxious to "clear the hook." This key offers the Morse code operator an investment that will bring years of pride and satisfaction. Try the Bencher "RJ" hand key at your nearby HRO. You will be convinced there is no better key available.

HRO Prices:

RJ-1	Black	\$139.95
RJ-2	Chrome	\$159.95

ST Series

Single Lever Paddles

Superb Bencher features and construction for the ham who prefers single lever operation.

HRO Prices:

ST-1	Black	\$129.95
ST-2	Chrome	\$154.95



Farallon Electronics



PACTOR-4 DR-7400

HRO Price \$1498.00

The DR-7400 offers a lower priced entry to the P4dragon modem class. The DR-7400 has been optimized for use with the new high-end data transmission mode PACTOR-4.

The DR-7400 is software compatible to the PTC-II series and to the DR-7800 so that existing PACTOR software (AirMail, RMS Express, Alpha etc.) can continue to be used.

Due to the plug compatibility of the radio ports, a change from the tried and tested PTC-II technology to the innovative P4dragon technology is very easy. Change over the plugs, turn on, and enjoy PACTOR-4!

- Has many of the same features as the DR-7800.
- Backwards compatible to PACTOR-1/2/3. Automatic negotiation during link setup.
- Noticeably improved reception with PACTOR-2 and PACTOR-3.
- Operating Modes: PACTOR-4, PACTOR-3, PACTOR-2, PACTOR-1, weather-FAX (receive), GPS / RTTY / NAVTEX decoder.



PACTOR-4 DR-7800

HRO Price \$1849.95

The DR-7800 P4dragon is the no compromise further development of the legendary PTC-II, which was designed for professional use and for the ambitious amateur radio enthusiast. The DR-7800 has been optimized for use with the new high-end data transmission mode PACTOR-4.

The DR-7800 is software compatible to the PTC-II series so that existing PACTOR software (AirMail, RMS Express, Alpha etc.) can continue to be used.

- Operating Modes: PACTOR-4, PACTOR-3, PACTOR-2, PACTOR-1, weather-FAX (Receive), GPS decoder.
- Display: 256 x 64 pixel OLED, blue, high contrast, excellent readability, no viewing angle problems, display of spectrum and much more.

PACTOR-4

- Max net speed 10500 bps.
- 1.5-3 x faster than P3.
- Backwards compatible.
- 2400 Hz bandwidth.
- Highly adaptive.
- Highly resistant to interference.
- 6 auto notches.
- Adaptive equalizer.



PTC-IIIusb

HRO Price \$1149.95

As successor to the beloved PTCIIusb it is mainly designed for PACTOR-III, thus allowing worldwide E-mail traffic via shortwave. It is however also very suitable for all other available modes, e.g. with Packet Radio, RTTY, weather FAX reception or decoding CW.

The PTC-IIIusb is software compatible to the PTC-IIusb so that existing software (AirMail, RMS Express, Alpha etc.) can continue to be used.

The PTC-IIIusb is not only an excellent HF-modem but also a powerful multi-mode controller. It supports the following modes: PACTOR-I/II/III, PR, (also RPR), RTTY, CW, PSK31, FAX, SSTV, AMTOR, NAVTEX, APRS®-Beacon.

Remote control your transceiver directly from the PTC-IIIusb for really comfortable operation. The PTC-IIIusb TRX interface is compatible with equipment from Icom, Yaesu, SGC, and Kenwood.

PACTOR-III as standard

- Widespread proven technique (Winlink, SailMail etc.).
- Max. 5200 bps net.
- High adaptivity.
- High interference immunity.
- Max 2400 bandwidth.
- Automatic frequency correction.

Farallon Cables / Accessories (see complete cable reference chart at www.farallon.us)

Model	Description	HRO Price
Miscellaneous		
9001	6' power cable	\$12.95
8120	1200 baud packet cable	\$43.95
8050	9600 baud packet cable	\$43.95
Control Cables		
8080	Modem to Kenwood or Yaesu radio, SCS 13pin DIN to DB9 female, 1.5m.	\$33.95
8081	Modem to Icom radio, SCS 13pin DIN to 3.5mm Mini Phone Plug, 6'.	\$33.95
8083	Modem to Icom or SGC radio, SCS 13pin DIN to male DB9, 5'.	\$33.95
8085	Modem to Yaesu FT847 radio, SCS 13pin DIN to DB9 female, 1.5m	\$33.95
8130	Modem to Yaesu radio, SCS 13pin DIN to 8pin Mini-DIN, 2m.	\$43.95
Audio Cables		
8050	Modem to Yaesu radio SCS 5 pin DIN to 6 pin mimi DIN 9600 baud	\$43.95
8120	Modem to Yaesu radio, SCS 8pin DIN to Yaesu 6pin Mini-DIN, 2m 1200 baud.	\$43.95
8123	Modem to Yaesu radio, SCS 8pin DIN to Yaesu 5pin DIN, 2m.	\$43.95
8125	Modem to Yaesu radio, SCS 5pin DIN to 1/8" stereo phone plug.	\$43.95
8127	Modem to Yaesu FT847 radio, SCS 5pin DIN to 1/8" stereo phone plug	\$43.95
9090	Modem to Icom radio, SCS 8pin DIN to Icom 8pin DIN, 1.5m	\$43.95
9095	Modem to Icom radio, SCS 8pin DIN to Icom 13pin DIN, 1.5m	\$43.95
9096	Modem to Kenwood radio, SCS 8pin DIN to Kenwood 13pin DIN, 1.5m	\$43.95
9097	Modem to Kenwood radio, SCS 8pin DIN to Kenwood 13pin DIN, 1.5m	\$43.95

**Visit HRO
on the Web:**
<http://www.hamradio.com>
**Check for
rebates and
manufacturer
specials before
ordering**

Kantronics



KAM XL™

Multi-Mode DSP Controller

HRO Price \$409.95

Kantronics' third generation multi-mode TNC is a state of the art design for operations on HF, VHF and UHF while supporting DSP modems and popular new modes of operation. The unit provides modes of Packet 300, 1200 or 9600 baud, G-TOR, Pactor 1, AMTOR ARQ, PSK31, RTTY, NAVTEX/AMTEX, ASCII, WEFAX and CW. It has a dual port mailbox and remote SYSOP access. It is GPS NMEA-0183 compatible and provides Kantronics Host Mode and KISS.



KPC-3 Plus

VHF / UHF TNC

HRO Price \$199.95

This compact, low current TNC has become the work horse of packet radio today. It features multiple packet connects, digipeating for APRS® operations, WEFAX reception, a GPS mode for tracking, personal packet mailbox and more.



KPC-9612 Plus

128 Dual-Speed Dual-Port TNC

HRO Price \$399.95

This is the rapid delivery model, supporting 9600 baud. It features both 1200 and 9600 packet ports, advanced APRS® digipeating (APRS® is a trademark of Bob Bruninga), (K-Net) networking, amateur beeper (paging) and more.

Keeping Up to Date . . .

The KAM '98 8.3 and KPC-3 Plus 9.1 will provide a second serial port for GPS and APRS® capabilities, plus additional GPS improvements.

The KPC-9612 Plus, now sold at version 9.1, has advanced digipeating for GPS, plus the ability to download EMWIN weather broadcasts.

Soldering Equipment

Weller®

WTCPT Soldering Station

HRO Price \$179.95



A soldering station is a must for every ham shack.

- Quick disconnect plug for iron and lighted on / off switch.
- Special "closed loop" method of controlling maximum tip temperature.
- Transformer powered with macro style, low voltage, temperature controlled soldering iron.
- Power unit housing features impact resistant plastic.
- Separate conductor grounds iron tip and terminates at third pin of power cord.
- Uses PT series tips and operates at 600°F, 700°F and 800°F.

WLC-100 Solder Station

HRO Price \$79.95



- 40 Watt solder station, 110 volts.
- Adjustable 5-40 Watts with safety guard solder iron.
- Includes holders, sponge and tip.

8200CT

Solder Gun

HRO Price \$49.95

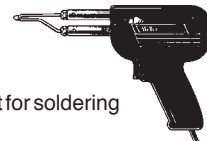


100/140W, 110 V. Ready to solder in 6 seconds. Finger tip selection of high / low power. Great for soldering coax connectors.

D650CT

Solder Gun

HRO Price \$79.95



Solder gun, 200/300 Watts. Great for soldering coax connectors outside.

ECG®

SOLDERING PRODUCTS

J-060VT

Soldering Iron

25-60 W

HRO Price \$19.99



JT-009

Three Replacement Tips for the J-060VT

HRO Price \$5.99

Radio Control

Timewave Technology

HamLinkUSB™

USB Rig Controller Plus

HRO Price \$59.95

Connect and control transceiver via USB with Plus option for T-R switch, key, footswitch input, or user I/O.



The HamLinkUSB™ Rig Controller Plus is a USB to logic level conversion device for CAT / CI-V enabled transceivers that provides PTT output, keying output, or foot switch input options.

The CAT / CI-V feature provides a logic level serial interface which connects directly with non-RS-232 CAT / CI-V inputs on Kenwood, Icom, Yaesu, Ten-Tec, Elecraft and Alinco models.

The controller is compatible with most soundcard and software control programs such as PK-Term 3.0.

HamLinkUSB Optional Cable Assemblies

HLUSB-CIV CI-V - Icom, Ten-Tec, Elecraft.

HRO Price \$8.95

HLUSB-CAT MiniDIN-8 cable assembly for Yaesu FT-857 / 817 / 100 / 100D

HRO Price \$13.95

HLUSB-4CON 4 conductor with 3.5 mm plug to open end cable.

HRO Price \$13.95

Call HRO for Quotes

RADIO CONTROL SOFTWARE

REMOTERIG

*The Ultimate in
Remote Control*

*Now with Dual
(Stereo) Receiver
and
Includes 12 V
Power Supply*

**Remoterig
RRC-1258-MkII-S-Set**

\$479.95 – HRO Price for the Set



The Remoterig RRC-1258-MkII-S-Set was developed to control Amateur Radio stations remotely via the Internet in a user friendly and cost-effective manner.

Remoterig units are used in pairs; one unit is connected to the radio, and the other to the control equipment. The system is unique in that no PC is needed; both voice and data communications are handled by the two units.

The RRC-1258-MkII-S-Set can be configured to work with almost all ham equipment currently available from Icom, Kenwood, Yaesu, and Elecraft. Remoterigs are especially useful in situations where you are (1) not allowed to install antennas at your home location, (2) the noise level is so high that a normal signal exchange is not discernible, (3) you want to build an antenna system too large for your local urban area, or (4) you do not want to be dependent upon a PC for the remote control.

The ultimate functionality of the Remoterig RRC-1258-MkII-S-Set can be experienced when the system is used with radios having detachable front panels such as the Kenwood TS-480, TS-2000, or Icom IC-706 series. Simply replace the cable between the control panel and the radio with the Remoterig system. The Yaesu Twin version and Electric K3 Twin versions are available.

The system also works very well with more traditional remote control situations from PC-based control software, like Ham Radio Deluxe; the Remoterig boxes solve the voice and data problems, but you do need a PC for the control software itself in this particular setup.

The Remoterig system itself will not introduce any latencies, and those introduced by the Internet will rarely be a noticeable problem. The Remoterig system also includes a unique solution for operating CW over the Internet with, among other

things, a built-in CW keyer that uses a standard 3.5 mm stereo plug.

The Remoterig RRC-1258-MkII-S-Set is connected to the Internet primarily via 10 or 100 Mbit Ethernet cable, and fixed connections like DSL, cable, or WLAN. 3G based mobile solutions will also work, although occasionally with reduced performance. The system is portable and can be used from almost any network connection in the world. Session initiation, audio (VoIP), and data are transferred using standardized protocols like SIP, RTP, etc., where you can select different audio qualities depending on available bandwidth. The Remoterig system is easily configured via modern USB and WEB based user interfaces. Stereo (dual receiver) works only with radios with dual receivers.

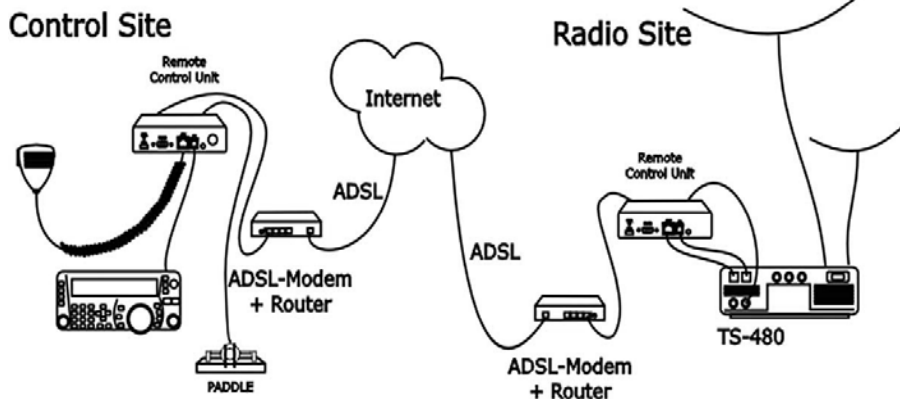


**An example of CW with
remote controlled Radio**

A CW keyer has been implemented in the RRC-1285S-MkII-S-Set software to make CW operation possible, even with longer Internet latencies and jitter. During normal operation we depend on the radio's sidetone for CW, so the problem of Internet latency is solved by the sidetone being generated locally in the Remoterig box. Remoterig automatically mutes the sidetone generated by the radio for x number of ms after the dot or dash is sent; the delay can be adjusted depending on the latency.

The CW-handler is a kind of adjustable "jitterbuffer" for the CW keyer at the radio end. If the latency of your Internet connection is not constant, the delay (in ms) can be set before the radio is keyed. The CW keyer reconstructs the transmission on the fly before it is sent; a system that is much more tolerant of varying latencies (jitter). Lengthier delay settings may provide higher tolerance against jitter, but will also effectively delay the transmitted CW signal.

Example: Remote control of Kenwood TS-480



As an example, the diagram shows a TS-480 in use with the RRC-1258-MkII-S-Set. Any of the available radios with detachable front panels, like the IC-706, and TS-2000, will be configured in the same manner. The cable between the front panel and the radio is replaced with two RRC-1258-MkII-S-Set; one connected to

the control panel, and one connected to the radio itself. No PC is necessary in this case.

When the power button is pressed, the radio on the remote side will start up, and all audio and information from the panel travels via the Internet between the pair of RRC-1258-MkII-S-Set units – a very

similar situation to SIP-based IP telephones. All appearances and functions will be as if the front panel and radio were directly connected. Presently, the TS-480 is the simplest to adapt using one additional cable (optional Kenwood E30-3500-05). Connection cables can also be made using the RJ-45 and RJ-11 connections.

RADIO CONTROL SOFTWARE



Radio Programming Made Easy With Software and USB Cables That Work!

Easily explore ALL the features of your radio. Options you struggle to set from the face of your handheld, mobile, HF radio or receiver are easily set up and saved in the RT Programmer for that model*. Programming Kits available for individual Alinco, Anytone, Baofeng, Icom, Jetstream, Kenwood, Wouxun or Yaesu radios.

RT Systems Programming Kits include RT software* on CD-ROM and RT System's USB interface cable. All cables are radio tested and guaranteed to work! Software and cables are made in the USA.

* Each RT Programmer is unique to a specific radio . . . just as your radio is unique in itself.

Call HRO for Pricing and Availability.

RTS-03 USB to Serial Adaptor

This adaptor forms an RS-232 com port that can be used by many applications. This USB to serial adaptor allows data to flow properly between devices without interference from its electronics.

Use it when the cable from the radio manufacturer comes with a DB-9 connection: packet cables, firmware upgrade cables, CAT cables, etc.

This adapter WORKS . . . and you have RT Systems support to help you should you need it.



USB
Computer
Connection

RT Systems Programmers* are available for 109 different radio models. Check with HRO for availability for your model.

HF Control / Data Cables

RT Systems USB control/data cables include the only USB data cable for the IC-92AD, USB CAT cables for many HF rigs, and USB data cables for HTs and mobile radios.

Cables are used with control software from other sources. Some of these cables double as programming cables for RT Systems software AND control cables with other software. You get both functions in one cable. These USB cables can be used to perform manufacturer's firmware updates if the update uses the CAT port of the radio.

RT Systems support is here to help you with com port setup for the cable should you need it. Drivers for Windows XP, Vista, Win7 or Win8 supplied on CD-Rom or will install automatically if an Internet connection is available.

It's Sooooo Easy!

- Spreadsheet design for memory channels. Many channel details completed **automatically**. Other details selected from lists. Less chance of errors for those settings. Fewer details to track down.
- Multi-row copy and paste. Column editing. Sort and unsort.
- Copy and paste between files.
- Open any other RT Systems version 4.50 file with the program for YOUR radio . . . even if the file was created for a different radio. Email files to your friends.
- Interface to External Data Sources.
- Import from CSV Files.
- **No com port set up.** USB cables that the program finds automatically.
- For more information about a particular programmer visit www.rtsystemsinc.com



Radio
Connection



800-921-4834
www.rtsystemsinc.com
510 Compton Street, Suite 105
Broomfield, Colorado 80020

System Requirements:
Windows XP, Vista, and Win7
or Win8 (full version) 32 or 64
bit. Local or network CD drive
for installation. USB port.

A RIGblaster is the easiest way to connect your radio to your computer to operate PSK31, RTTY, WinMOR, Olivia, Packet and more! Chase DX easily using advanced JT65-A! Unrivalled simplicity, True FSK, True-keyed CW & CAT/CI-V Control – see why these are the World's Finest Digital Mode Interfaces! Includes DVD with more than 100 popular software programs. All RIGblasters are ground isolated and RF Filtered. Supplied with all the cables you need to get on the air. These models work with more than 2000 radio models. Kits are available for 4-pin round or RJ22 connectors.



RIGblaster Pro

RIGblaster PRO does everything you can possibly do with a computer and a radio! Two mic inputs allow for auto-switching and dual PTT inputs for foot switch, amplifier, or sequencer. Run any digital mode, microphone equalization, record QSO's, rig control, true keyed CW and FSK. PTT override and interrupt enables mic to override the computer or stop the computer program! Perfect for contesting or SSTV operation. Includes: (1) 3' mic cable, (1) 6' DB9M to DB9F serial cable, (6) 6' 1/8" audio cables, USB to RS232 male adapter, software programs DVD, and accessory kit. #58002-953 **HRO Price \$299.95**



RIGblaster Advantage

The only RIGblaster with a built-in soundcard. It works with any radio using one USB cable to connect to PC. Built-in CAT or CI-V rig control interface. Mic input with PTT override and interrupt. Front panel transmit and receive audio and VOX delay controls. Fully isolated CW / FSK output for keyboard CW and RTTY. Includes (1) 3-ft 8-pin mic cable, (1) 6-ft 1/8" audio cable, USB cable, software programs DVD, and accessory kit. #58012-1288 **HRO Price \$199.95**

RIGblaster Plug & Play

Simple USB Plug and Play installation. One plug to the radio and one USB connection to the computer. Built in USB to serial converter for PTT, CW and CAT or CI-V rig control. USB powered, no additional power needed. Compact: great for mobile or QRP operation. Fully isolated CW keying output for direct keying of your rig's CW. Includes: radio specific 8-ft data jack adapter cable. 12" computer audio and USB cables and software programs DVD. #58009-960 **HRO Price \$119.95**



RIGblaster Plug & Play - Radio Versions

Model Number	Description	HRO Price
RB/PP/I8D	Icom 8 PIN DIN	\$119.95
RB/PP/I13D	Icom 13 PIN DIN	\$119.95
RB/PP/IYK6MD	Icom, Kenwood and Yaesu radios with 6 PIN DIN	\$99.95
RB/PP/K13D	Kenwood 13 PIN DIN	\$109.95

RIGblaster Accessory Cables

Model Number	Description	HRO Price
#58108-972	Rig Control Cable for CAT (Yaesu 8-pin min DIN)	\$14.95
#58108-974	Rig Control Cable for CAT (Yaesu 6-pin)	\$13.95
#58107-971	Rig Control Cable for CI-V (Icom) Radios	\$9.95
#58120-984	CW Cable Kit for RIGblasters, 6 ft	\$9.95

RIGblaster Nomic



The RIGblaster Nomic is a small, simple, rugged and inexpensive sound card interface, perfect for Echolink®, portable, or field setups. Supplied with both a standard DB9 RS232 serial cable and USB cable interface (supported for Mac (OS9,10), Linux, Windows (98SE – Vista 32 and 64 bit)! May be used with old or new computers with your choice of USB or RS232 DB9 serial. No external power supply necessary so it is great for portable or QRP operation. Simple and inexpensive choice for a dedicated Internet link with the EchoLink® System. Includes: 3' 8-pin round circular mic cable, 3' RJ45 mic cable, USB to RS232 male adapter, 6' DB9M to DB9F serial cable, (2) 6' 1/8" audio cables, owner's manual, software programs DVD, and accessory kit. #58008-959 **HRO Price \$59.95**



RIGtalk

USB Rig Control Interface

Control your radio using your PC. USB to TTL level interface for CI-V control: Icom, Ten-Tec, or Elecraft. CAT Control for Yaesu and CI-V radios. Pocket-sized USB dongle. Design tested with most rig control and logging software. Compatible with USB 2.0 or lower. Includes software programs DVD. #58201-1004 **HRO Price \$54.95**

Order pre-packaged with radio cable:
RIGtalk-CIV for Icom & Ten-Tec CI-V Radios \$56.95
RIGtalk-CAT for Yaesu FT100, 100D, 817, 857, 897 \$61.95
RIGtalk-CAT6D for Yaesu FT-736, 747, 767, 990, 1000 \$64.95



CWswitch

The CWswitch is a two-radio CW selector switch that enables a CW paddle and keyers to be swapped between two radios with the flip of a single toggle switch. The CWswitch selects which radio is keyed for use with break-in or semi-break-in transmit activation using CW paddles, straight keys, external keyers or computer keyers. This handy device enables CW operators to switch quickly between two radios without having to wire keys in parallel or move cables. #58420-112 **HRO Price \$59.95**

DC POWER ACCESSORIES

POWER DISTRIBUTION

Super PWRgate PG40s

12 volt uninterruptible power switch that can supply up to 40 amperes continuously from either a power supply or a battery, and can also charge the battery with its high performance charger. Connected equipment will instantly switch to battery during a power blackout or power supply failure. #58403-1046



HRO Price \$139.95



ISOpower

ISOpower is a solid-state switch using a high powered FET. The switch turns on whenever the car's alternator is running and turns off when it is not running. The switching point is 13.5 volts. Safely handles 40 amperes and is protected with a 40 ampere ATC blade fuse. Includes three sets of Powerpole® connectors. #58401-1044 **HRO Price \$89.95**

DC-to-GO

with 4008 & Super PWRgate



Provides easy-to-use portable DC power. Takes group 24 size battery (sold separately). Tough polypropylene battery box (inside dimensions: 11

1/8 x 7 3/8 x 10 1/8"). RIGrunner 4008 (conveniently mounted to battery box) and Super PWRgate PG40S (conveniently mounted to battery box). #58513-1381 **HRO Price \$249.95**

DC-to-GO

with RIGrunner 4008



#58513-1061

HRO Price \$134.95



PWRcrimp Crimp Tool

High performance Powerpole® crimp tool. More reliable, lower resistance and much easier than soldering. Crimps Powerpole® 15, 30 and 45 amp. Connector's ratcheted mechanism assures proper crimps every time. #58568-1049 **HRO Price \$39.95**



PWRbrite

LED Light Strip

Low current, high output LED light designed to be mounted to any flat surface. The self-adhesive, snap-in mounting clips allow for easy installation. LEDs produce little, if any, heat and resist shock and impact. #58518-1066 **HRO Price \$39.95**

PWRguard Plus



Automatic safety switch turns off if voltage exceeds 15 volts or drops below 11.0 volts.

Turns back on when voltage is in safe operating range. Momentary voltage dips below 11.0 volts are ignored to prevent false tripping while transmitting. Rated for 40 A maximum while transmitting, 30 A continuous duty. Soft turn-on / turn-off solid state switch protects radio and reduces inrush current – no relay contact bounce! Remote on / off capability. Indicator LEDs and audible alarm notify user when safety switch turns power off. Buzzer may be disabled by user. Uses Anderson Powerpole® connectors #58402-1045 **HRO Price \$114.95**

PWRcheck



Provides display of voltage, current flow in either direction, wattage and amp-hours. Measures 0 V to 60 V (less than 8 V requires USB power to PWRcheck), 40 A continuous load. Accurate to within +/- 10 mV, +/- 10 mA. Resolution: 10 mV, 10 mA. Backlit graphics LCD displays data in digital, analog and bar graph formats. USB computer interface for configuration and log data download. Programmable alarm conditions for over-current, over / under voltage, amp hours. Uses Powerpole® connectors. #58430-1286 **HRO Price \$179.95**

RIGrunners

RIGrunner Power Distribution Panels

RIGRunners are the most convenient and safest way to connect all your 12 volt equipment. Uses Anderson Powerpole® – ARES, RACES, RSGB standard. Polarized and color keyed. 40 Amps total (8012 is 80 Amps total). Outlets fused with assorted ATC / ATO automotive fuses. Blown fuse LED indicators. For home and mobile installations. 6-foot input cable, #10 AWG with 1/4-inch terminals. (#8 AWG for 8012). Includes Powerpole® packs. **Alternate voltage versions of RIGrunners (24-48 VDC) are available! HRO Price \$CALL**



RIGrunner 4004U 40 amp, 4 outlets. 2 USB ports with 4 A charge. 6 pairs of 30 A Powerpole® sets. #58315-1043 **HRO Price \$79.95**



RIGrunner 4005 40 amp, 5 outlets. 6 pairs of 30 A Powerpole® sets. #58312-1039 **HRO Price \$69.95**

RIGrunner 4005H

40 amp, 5 outlets horizontal. 6 pairs of 30 A Powerpole® sets. #58312-1041 **HRO Price \$69.95**



RIGrunner 4008 40 amp, 8 outlets with LED and audible alarms. 6 pairs of 30 A Powerpole® sets. #58307-1035 **HRO Price \$84.95**



RIGrunner 4008H 40 amp, 8 outlets horizontal. 12 pairs of 30 A Powerpole® sets. #58307-1037 **HRO Price \$89.95**



RIGrunner 4010S 40 amp, 10 outlets. One master outlet and nine switched with LED and audible alarms. 12 pairs of 30 A Powerpole® sets. #58303-1031 **HRO Price \$129.95**



RIGrunner 8012S 80 amp, 12 outlets with LED & audible alarms. 12 pairs of 30 A Powerpole® sets. #58301-1029 **HRO Price \$149.95**



RIGrunner 4005i Remote Control

Internet based remote monitoring and control of your DC powered systems from any Internet-ready mobile device or PC. 12 VDC power distribution delivers up to 40 amps total through 5 outlets while transmitting. Each outlet features independent on / off control and user configured current trip point, 1 A to 40 A. RJ45 ethernet port standard. WiFi option available. #58312-1353 **HRO Price \$274.95**

DIGITAL SOUND

Tigertronics™



SignalLink™ USB

Integrated USB Sound Card

SignalLink™ USB combines the legendary performance of our SL-1+ with a state of the art "built-in" low-noise USB sound card. The unit delivers optimum performance while eliminating the need to attach to your computer's existing sound card. Convenient front panel controls and simplified installation make this one of the most user-friendly interfaces on the market.

ALL sound card digital and voice modes are supported by the SignalLink™ USB including traditional modes such as RTTY, SSTV, CW, PSK31, MT-63 and EchoLink®. Performance on all modes has been optimized by the use of special low-noise parts and careful design techniques. Front panel controls let you adjust your transmit audio, receive audio and transmit delay "on the fly."

The SignalLink™ USB works with ALL radios and can be attached to the mic jack, data port or accessory port (see table below.) A wide selection of fully assembled radio cables is available for common base and mobile radios. A special unterminated radio cable is available for handhelds and radios that use a non-standard connector.

The SignalLink™ USB comes fully assembled and tested. No external power required; power is from the USB port. The unit comes with a USB cable. Specify which cable is to be included by using the table below. Also included: mono cable, jumper wires, allen wrench, software CD, documentation. Supports Windows, Mac OS9.1 or later and Linux. FCC certified to comply as a Class B digital device. Unit prices including the radio cable are shown in the table below.

HRO Price \$109.95 each

Microphone Connectors

SLUSB4R	For 4-pin round mic connector
SLUSB8R	For 8-pin round mic connector
SLUSB RJ11	For RJ-11 mic connector
SLUSB RJ45	For RJ-45 mic connector
SLUSBKX3	For Elecraft KX3

Accessory Port Connectors

SLUSB5PD	For 5-pin DIN data / accessory port
SLUSB8PD	For 8-pin DIN data / accessory port
SLUSB6PM	For 6-pin mini DIN data / acc. port
SLUSBK3	For Elecraft K3
SLUSB13I	For Icom 13-pin DIN accessory port
SLUSB13K	For Kenwood 13-pin DIN acc. port

D-Star Audio

Works with PCs and Macs

INET Labs



DV Dongle

The DV Dongle connects to your PC or Apple Mac via a USB port and provides encoding and decoding of compressed audio using the DVSI AMBE2000 full duplex vocoder DSP chip.

AMBE technology is used in all D-Star radios to provide efficient voice transmissions. It is also used in some HF digital protocols by vendors like AOR.

The DVTool application used with the DV Dongle may be installed and run on Microsoft XP/Vista, Mac OS Leopard or many flavors of Linux. The unit includes a USB A to mini-N cable. PC and Mac users must download an FTDI USB device driver. **HRO Price \$199.95**

DV Access Point Dongle

DV-AP 440 now available for 440 MHz Only



The DV Access Point Dongle (DVAP) provides a way to connect to the international D-Star network. The DVAP is used with a PC or Mac and an internet connection.

You can walk away from the computer and transmit / receive D-Star voice and data using a 2 meter D-Star radio. It uses the computer's USB port and a PC running Windows XP / Vista / 7 / Linux or an Intel Mac running OS X. The DVAP is a GMSK modem with a 2 meter or 70 cm transceiver built in. The DVAP tunes between 144-148 MHz for IARU regions 2 and 3 and 144-146 for region 1.

HRO Price \$239.95

DV-AP 440 HRO Price \$269.95

Icom Sound Card

W4PC SOFTWARE

Digital Desktop Sound Card for Icom 7200 / 7600



HRO price CALL includes USB cable

No need for a soundcard interface! They are built in to the radio, so all you need is a USB cable (included) and free USB port on your computer. Includes the soundcard modes of RTTY, MT-63, PSK-31, SSTV, built-in logbook for logging, macros. All the features of the Digital Desktop for Kantronics / Timewave with just the soundcard modes!

Kilowatt Monitor

Kill-A-Watt™

Connect equipment into the Kill-A-Watt™ to assess its efficiency. A large LCD display counts consumption by the kilowatt hour just like utility companies. You can figure out your electrical expenses by the hour, day, week month, even an entire year. Monitor the quality of your power by displaying voltage, line frequency, and power factor.



Specifications: Operating Voltage: 115VAC. Maximum Voltage: 125 VAC. Maximum Current: 15A. Maximum Power: 1875 VA. **HRO Price \$24.95**

24 Hour FAX Order Numbers

Anaheim	714-533-9485
Atlanta	770-263-9548
Denver	303-745-7394
New Castle	302-322-8808
Oakland	510-534-0729
Phoenix	602-395-1244
Portland	503-684-0469
Salem	603-898-1041
San Diego	858-560-1705
Sunnyvale	408-736-9499
Burbank	818-842-5283
Woodbridge	703-494-3679



West Mountain Radio audio products contain ClearSpeech® noise reduction/digital signal processing that provides extremely effective noise reduction for voice and CW. Reduces or eliminates atmospheric noise, hum, hiss, heterodynes & static. Greatly improves the signal-to-noise ratio and thus the readability of all QSOs.



Noise Reduction Speaker

CLRspkr
ClearSpeech® DSP

Amplified loudspeaker with ClearSpeech® adaptive DSP noise reduction for voice and CW. Recognizes intermittent nature of CW and allows it to pass noise free. Continuously variable adaptive filter noise reduction. Contains 4-in. loudspeaker with 7.5 Watts RMS maximum amplifier. Volume control knob for adjustment of internal speaker sound level. Front mounted 1/8 - inch stereo output jack for powered speakers or 16 ohm (or higher) headphones. #58407-948 **HRO Price \$199.95**

Noise Reduction Processor

CLRdsp
ClearSpeech® DSP



Speaker and headphone amplifier with ClearSpeech® adaptive DSP noise reduction for voice and CW. Recognizes intermittent nature of CW and allows it to pass noise free. Continuously adjustable noise reduction. Contains 11 watt (into 4 ohms) power amplifier. Sturdy aluminum case - Ideal for mobile operation as well as home station. Plugs into the speaker or headphone output on the radio. Powerpoles plug into any 12V supply. #58407-949 **HRO Price \$199.95**



High Power 15 Watt Speaker

PWRspkr 15W

RMS linear power amplifier minimizes distortion at high sound levels. Sharp bandpass filter with 300 Hz to 3.2 kHz pass band attenuates unneeded bass and treble sounds. Adjustable gain control. Plugs into radio's speaker or headphone jack. Ideal for use in truck or car for improved communication in noisy environment. Power cable fitted with Powerpole® connector. #58406-947 **HRO Price \$79.95**

RF Immune Computer Speakers

COMspkr

Eliminate HAM radio station interference. Replaces RF interference prone computer speakers. Amplified speaker system optimized for operation in close range of any radio transmitter. Exceptionally high rejection of radio frequency interference from 1 to 1000 MHz. Stereo high fidelity response for use with voice or music. High 3-Watts per channel acoustic power output can be heard clearly in noisy environments. Built-in amplifier assures compatibility with most computers and/or two way radios. #58409-950 **HRO Price \$39.95 per pair**



Global Positioning

AvMAP
SATELLITE NAVIGATION

The GPS Solution for APRS® Operations

**Geosat 6
APRS®**
HRO Price CALL



Geosat 6 APRS® has a metal chassis, a 4.8" full color display in 16:9 widescreen format and a magnetic mount for easy mounting in the car. It has a 50 channel -160 dbm tracking sensitivity u-blox GPS engine for fast and highly accurate fix.

New navigation functions include "Trip Computer" that shows overview of the journey, with speed graphs, info about average speed, highest speed reached, stop time etc. Turn-by-turn vocal instructions announce complete street names thanks to the Text-to-Speech technology.

Geosat 6 APRS® provides GPS location information for your transmitted APRS® beacons, and it shows received APRS® information on its map displays. It can store up to 1000 APRS® contacts and display them on the map. Set your Geosat 6 APRS® to navigate to your favorite APRS®

mobile station and get rerouting instructions when the new position is reported!

Watch APRS® activity on the screen to distinguish between fixed and mobile APRS® stations. Used with a Kenwood D710A/E and set in the KENWOOD format sentence, the Geosat 6 APRS® supports standardized APRS® icons.

Geosat 6 APRS® fully takes advantage of the Kenwood format sentence. The Tactical mode allows you to select an APRS® contact to see on the full info page its speed, course and altitude in addition to its call sign and position.

The Geosat 6 APRS® comes with a Kenwood-ready cable and exclusive APRS® bi-directional RS-232 APRS® interface compatible with ALL current APRS® ready Kenwood radios.

GPS Unit for Kenwood

Green Light Labs

GPS 710
Plug-and-Play GPS
for the Kenwood 710 Series

The GPS-710 is a custom built, uncluttered, plug-and-play solution for adding a stand-alone GPS to your Kenwood TM-D710A or RC-D710 radio. It uses a top-notch 20 channel SiRF-III GPS chipset (with WAAS, ENGOS and MSAS augmentation) that can acquire GPS lock from a cold start in well under 60 seconds. The active internal antenna has proven itself in prototyping and beta testing to maintain GPS lock, even in very unfavorable placements. The GPS-710 pulls about 40mA of power from the line. The GPS-710 has not been endorsed by Kenwood but it should be well within the operational limits of the TX/RX base. **HRO Price \$129.95**



Timewave Technology

Digital Processor



DSP-599zx
All Mode Noise Filter
RTTY Modem

This powerful noise and QRM filter surpasses the newest "DSP" radios with its flexible features. Continuous filter tuning up to 5 kHz opens up wider bandwidth modes like shortwave, AM broadcast, and VHF/UHF FM. Heterodynes disappear, weak signals pop up from the noise, and the sharp filters slice away QRM.

The DSP RTTY modem (w/optional DSP-RTTY software) pulls out solid copy when you can barely hear a signal. An AM line noise filter dramatically reduces noise. Filter settings are easy-to-read on the backlit alphanumeric LCD display. Pushbuttons select noise reduction, memories, voice, CW, and data modes. Optical encoders tune the filters.

- Hyperspeed DSP - 27 ns, 36.8 MIPS.
- 2 selectable channels with multiple memories.
- Front panel programmable input sensitivity and line output level.
- AC line noise AM filter.
- Calibrated audio volt meter & generator.
- 13 preset data filters plus two user presets.

DSP-599zx HRO Price \$399.95
AC-8 P.S. \$24.95

Noise Canceller

ANC-4

The ANC-4 RF device eliminates or reduces power line noise, computer noise, TV generated interference, and other types of electrical noise. Attach the unit directly to the antenna connector of the receiver or transceiver to cancel locally generated noise before it affects the receiver AGC circuits. Reception of signals well below the noise level of the local interference is possible.

To cancel locally generated interference, the ANC-4 detects the interfering signal and adjusts its phase and magnitude so that it matches the offending interference at the receiver input, but is 180 degrees out of phase, effectively cancelling the interference. Front panel controls allow adjustment of both phase and magnitude, providing extremely deep cancellation.

Connect the ANC-4 between the main station antenna and the receiver antenna connector. A second antenna connects to the ANC-4 to pickup noise. A short wire antenna or a short collapsible whip is generally satisfactory for eliminating noises generated around the operating position or in the house, but an external antenna usually works better to eliminate noises generated outside the home. Any noise antenna that works, including combinations of horizontal and vertically polarized antennas, is satisfactory.

The ANC-4 operates as an active antenna by using the noise antenna and the NOISE GAIN control to amplify the antenna output. The unit can also be used as a diversity combiner to peak weak signals or null interfering signals. **HRO Price 189.95**

Low Pass Filter



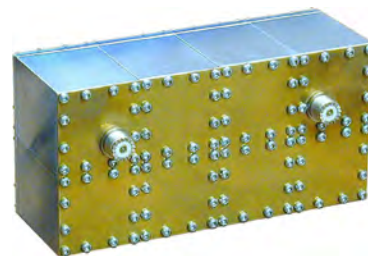
Benchner's low-pass filter has exceptional specifications. Working range: 1.8-29 MHz. Impedance: 50 ohms. Power rating: 1.5 KW continuous, 5 KW peak. Attenuation: at least 80 dB.

HRO Price \$129.95

Bandpass Filters



DIGITAL COMMUNICATIONS INC.



DCI- 146 / 440-DB

Eliminate intermod with these band-pass filters for 144, 220, or 440 MHz or with the 144 / 440 MHz dual band filter. Connect a filter between your VHF / UHF base or mobile rig and antenna. Enjoy your favorite station without listening to the squawks and squeals of intermod. These filters reduce the strength of interfering signals while allowing the signals you want to hear to pass through at virtually full strength.

The filters are made to first-class specifications with silver-teflon connectors and extruded aluminum, copper and brass. In addition to the standard 4-pole filters, 7-pole and larger ultra-sharp filters are available. The DCI-146-4H intermod filter for 2 meters is 12" X 3" X 5" and has UHF connectors.

Model	Band	HRO Price
DCI-146-4H	144 MHz	\$CALL
DCI-223.5-3H	220 MHz	\$CALL
DCI-445-10C	440 MHz	\$CALL
DCI-146/440-DB	144/440 MHz	\$CALL

Encoders / Decoders



COMMUNICATIONS
SPECIALISTS, INC.

Tone Signalling

Tone encoders and decoders are just what you need to control your repeater or listen only to signals that are meant just for you.

	Encode	Decode	Comments	HRO Price
TS-64WDS	*	*	Universal design, CTCSS encoder / decoder capability for all FM transceivers.	\$54.95
SS-64	*		DIP switch programmable CTCSS encoder for all FM transceivers.	\$28.95
DCS-23	*	*	Motorola® type encoder/decoder. Compatible with all DCS systems.	\$59.95
ID-8			Morse Code Identifier. 8 programmable, selectable messages for repeater ID.	\$69.95

Call a Helpful Ham at HRO with Your Questions

Speaker



SpectrumForce
Scanner Lapel
Speaker
HRO Price
\$19.95

Receive Only Filters



Airband Filter ABF 0604
Filters interference from FM broadcast and public safety / weather broadcasts. Covers 118-138 MHz. **HRO Price \$79.95**

BPF-1632
Shortwave
Band Pass
Filter 1.6-32
MHz, BNC
connectors.



HRO Price \$49.95



Airband Filter BPF-Air
Filters interference from 112-140 MHz air band transmissions. BNC connectors.
HRO Price \$49.95

BPF-VHF
VHF Band
Pass filter
passes 137-
174 MHz BNC
connectors.
HRO Price \$49.95



HPN-30118 Combined notch filter for FM broadcast (87-109 MHz) and high pass (0-20 MHz) BNC connectors.
HRO Price \$49.95



Pre-Amps

M-75
Pre-Amplifier has variable gain control and band pass filters to minimize interference. Range: 24 MHz to 2150 MHz.
HRO Price: \$199.95



LNA-2000-B
Low noise preamp for 30-2000 MHz, F connectors, VDC 11-13V (not supplied).
HRO Price \$79.95

LNA-AIR
Low noise AIR preamp for 118-137 MHz, 20 dB gain, BNC connectors, 12 VDC via coax.
HRO Price \$79.95



LNA-VHF-B
VHF pre-amp tuned low noise 137-174 MHz. 20 dB gain, BNC connector, VDC required.
HRO Price \$79.95

LNA-WIDE-O
Wideband Pre-Amp for 25 - 1300 MHz, outdoor all weather mast mounted.
HRO Price \$299.95



Free UPS Brown Shipping for Most Orders Over \$100

Desk Mounts



(Radios not included)

DESK-MT-BASE-4
Desk mount for 4 base scanners.
HRO Price \$79.95

DESK-MT-BASE-3
Desk mount for three base scanners. **HRO Price \$69.95**



DESK-MT-BASE-2
Desk mount for two base scanners.
HRO Price \$59.95

DESK-MT-PORT-3
Desk mount for three portable scanners. **HRO Price \$59.95**



DESK-MT-PORT-2
Desk mount for two portable scanners.
HRO Price \$49.95

DESK-MT-PORT-1
Desk mount for one portable scanner.
HRO Price \$39.95



EQUIPMENT MOUNTS



Radios are NOT included. They are shown for illustration purposes only.



**Motorcycle Mount
for Radio Remote Heads
LM-1100**

Mount this ball and socket design on handlebars or tubing up to 1 inch in diameter. The mount is made of powder coated marine grade aluminum so it will hold up in just about any weather conditions. Lifetime warranty. **HRO Price \$39.95**



**Low Vibration Mount
LM-500H**

With two directional adjusting knobs and a unique telescoping shaft, this radio mount is ideal for your mobile rig, XM, Sirius, or other portable satellite radio receiver. A circular black adhesive disc is also included with the mount and easily converts the super strong windshield suction cup on the pedestal into a reliable console mount. **HRO Price \$24.95**

**WindowMate Express
LM-400EXP**

The WindowMate Express is a version of the original Window-Mate and features an Express Mount attached to the integrated swivel. This mount is perfect for any electronic device using a button, leather case or OEM clip **HRO Price \$19.95**



**Free Shipping for
Most Orders
Over \$100
via UPS Brown**



**UltiMount
LM-700**

The UltiMount installs in seconds and can be swiveled, rotated and adjusted to virtually any position. Secured with a flexible pad that has 3M automotive adhesive on the back, the UltiMount can be removed without leaving any residue. **HRO Price \$24.95**



**Cup Holder Mount
LM-801EXP**

The Cup Holder mount works for either an HT or a remote radio head. A flywheel control on the top of the base allows the user to adjust the mount to just about any size cup holder. The mount stands 5 1/2 inches tall can be installed or removed in seconds. **HRO Price \$24.95**



**LoBoy Mount
LM-600**

A universal, low profile mount for securing hands free cradles, XM and Sirius satellite radios, TFT displays and more. The LoBoy features an integrated swivel which allows easy adjustment in any direction, holding securely without locking or tightening levers. The flexible mounting pad with its 3M adhesive back makes installations fast, simple and strong. **HRO Price \$14.95**



**Adapter for
Yaesu FTM-350
LM-AD1**

Adapter kit for the FTM-350 remote display head and similar (including Icom) remote display heads that use the camera style threaded socket to hold the display head to the mount. The kit is sold separately and attaches to all the Lido Mounts. **HRO Price \$8.95**



**Floor Mount
LM-300**

This mount has a 15" Gooseneck Swivel Mounting Pedestal, allowing you to place your device in the perfect position for optimal viewing. Just loosen the passenger seat bolt, slide the mount bracket under the bolt, tighten the bolt. The mount comes with a 4 hole AMPS plate to mount remote heads. **HRO Price \$24.95**

**The BUG Mount
LM-900**

shown with
optional
radio



The BUG is a mount for securing small, narrow profile radio control heads for Satellite radios, (both XM and Sirius); VHF radios, HAM radios and more. **HRO Price \$19.95**

**Vent Mount
LM-100**

The vent mount has a 4 hole AMPS pattern that can be attached to Alinco, Icom, Kenwood and Yaesu remote head brackets. Swivel 360 degrees for optimal viewing. The vent mount can be installed or removed in seconds. Fits most horizontal vent louvers. It does not work on the large circular vents like those found in Mustangs and PT Cruisers. **HRO Price \$14.95**



**Vent Mount w/
Side Grip Holder
LM-100H**

The vent mount includes a side grip holder for some Kenwood and Icom remote heads. The grip has padded arms and can handle devices from 1 7/8 inches to 4 1/4 inches in height. Easily remove your device to store out of sight when you reach your destination. For use with horizontal air vent louvers. **HRO Price \$24.95**



**Bean Bag Dash Mount
LM-25**

The bean bag includes a safety loop and a plastic hook to ensure the stability of the weighted friction dash mount. The open design in the front of the mount allows for viewing your entire GPS. **HRO Price \$19.95**

**Bean Bag Dash / Windshield Mount w / Side Grip Holder
LM-2500H**



The bean bag mount weighs 2 pounds and has a non-skid surface on one side. On the other side is a plate designed for the LM-500 mount suction cup to attach to. The Gripomatic side grip holder has padded arms that hold your transceiver. **HRO Price \$39.95**



SOFTWARE DEFINED RADIOS

Wideband Digital Radio – NetSDR
High Performance 16 bit SDR on the Network
 HRO Price \$CALL



The NetSDR radio is a high performance networked SDR with 1.6 MHz bandwidth. The NetSDR uses a high performance 80 MHz, 16 bit ADC with both dithering and randomization for best performance. The output I/Q bandwidth is configurable via software. PC communications are handled over a 100 base-T port using 24 or 16 bit I/Q words.

The NetSDR is a complete plug and play solution. As opposed to other SDRs in the market, there is no need for additional preamplifiers, preselectors or code development. The unit is compatible with the Moetronix SpectraVue™ and SDR-Radio software

that will have you up and running in minutes. The software includes analog and digital mode demodulation and I/Q capture of spectrum at up to a 1.6 MHz bandwidth. The SDR radio software allows the use of the NetSDR over the Internet. The full 1.6 MHz waterfall and demodulation audio can be transported via a 5 KB/s link.

The NetSDR packets are fully routable. This means that the receiver can be placed at remote locations. Multiple receivers can also be combined and its data transported over a higher data rate ethernet pipe using simple switches and routers. In this application, each NetSDR can be set to a different IP address or port.



SDR-IQ™
Software Defined Radio,
Spectrum Analyzer
& Panoramic Adapter
 HRO Price \$509.95

The SDR-IQ™ is a software-defined HF receiver with a spectrum analyzer and demodulation capabilities. The hardware samples the whole 0.0001-30 MHz band using a high performance, 14 bit analog-to-digital converter (ADC) running at 66.6 MHz. The digital data from the ADC is processed into I and Q format using a direct digital converter (DDC). The I and Q data is then sent to the PC for processing using a USB 2.0 interface. All of the demodulation and spectral functions are done on the PC side.

The SDR-IQ™ comes with a high frequency (HF) amplified front-end with switched attenuators, switched filters, and 1 Hz tuning. The SDR-IQ™ comes with the latest version of SpectraVue™ software. It supports AM, WFM, USB, LSB, N-FM, DSB and CW with fully adjustable DSP filter bandwidths and FFT sizes of 2048 to 262144 points. The resolution bandwidth is as low as 0.031 Hz.

GPS, Radio & Phone Mounts

Portagrip

Portagrip's collection of mounts for cellular phones, GPS units and radios will make your mobile operations easier and safer.



716

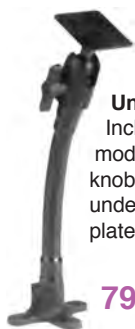
Slimline 2000 Pedestal Mounts:
 Pivot 210 degrees and rotate 360 degrees, 6" or 9" heights. Includes model 716 w/set screw adjustment at head and foot, 717 knob adjustment at head and foot.

Mini Mount:
 Perfect for tight installations, height only 4". Includes models 77-04 set screw adjustment at head and 727-04 knob adjustment at head.



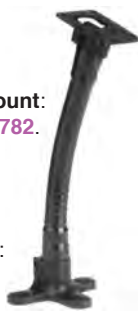
727

Stay-put Flex Mount:
 Includes model 782.



797

Uniflex Mount:
 Includes model 797 with knob adjustment under mounting plate.



782

Standard Mounts:
 Split ball base with 90 degree tilt movement. Includes models 320 std mount w/6" rise, 322 deluxe mount w/6" rise, 328 mount base only accommodates 5/8" diameter post and tilts 0 to 90 degrees, 329 base only accommodates 5/8" diameter post and tilts to 45 degrees over center.



322

Uses

- High performance HF receiver with 190 kHz realtime panoramic adapter.
- Ultrasound experimentation (Sonar, underwater ultrasound, bat and insect detectors).
- Infrared subcarrier detection / communications.
- Record up to 190 kHz of spectrum to hardrive for later playback and demodulation
- Panoramic adapter for communication receivers (any IF in HF band 455 KHz, 8.83 MHz, 10.7 MHz, 21.4 MHz, etc.).
- Very low frequency (VLF) studies.
- Spectrum analyzer backends.
- Processor for radio astronomy receivers.

Key Features

- Maximum display bandwidth of 196 kHz at an incredible 0.75 Hz RBW.
- Records and plays back spectrum segments.
- Covers 500 Hz - 30 MHz.
- Drivers for Linux and Windows.
- Network server application for Linux and Windows. Allows remote use of the radio across high speed internet.
- Directly interfaces with Icom, Kenwood, Elecraft, and Yaesu radios as a tracking panoramic adapter.
- Built-in serial RS-232 port.
- Supports AM, FM, NFM, WFM, LSB, USB, CW, CWR, DSB, DRM and custom demod filters / offsets.
- Outputs data in I/Q Wave Format, Excel and graphic formats with resolutions as wide as 262144 pixels.

Call HRO for SWL Books



S450DLX Field Radio

\$99.99
– HRO Price

- AM / MW (520-1710 KHz / 522-1620 KHz), FM (88-108 MHz), SW (continuous frequency range from 1711-29999 kHz).
- Frequency tuning steps: choose from three methods (fast / slow / stop).
- High performance IC and MOSFET: provides high sensitivity, strong anti-interference, low background noise and lower distortion.
- MW / SW IF wide / narrow bandwidth selection:
- improves audio fidelity and minimizes noise.
- MCU control (micro controller unit) and large LCD backlight display with frequency, clock, battery level indicator, and signal strength indicator.
- AM band features dual conversion PLL technology, which provides anti-image rejection.
- 50 station memory (10 presets for each band).
- 12.2" X 7.6" X 3.9"
- Weighs 3.59 pounds.



Satellit 750

\$300.00 – HRO Price

When you want full shortwave capabilities and a classic design, choose the Satellit 750. Advanced DSP technology and a 360-degree rotating AM antenna enhance the radio's tuning sensitivity to help you pull in weak signals. Listen to AM, FM, shortwave with SSB, and aircraft band frequencies. Program up to 100 of your favorite choices. You can also connect your MP3 player for even more listening choices.

- AM, FM, aircraft band (117-137 MHz) and shortwave (1711-30000 kHz).
- Set 9/10 kHz AM tuning; set FM tuning range.
- Single side band (SSB).
- Using DSP technology to enhance the highest sensitivity and selectivity with excellent S/N ratio and anti-interference results in good reception sound quality.
- 360 degree rotating AM antenna.
- Auto / manual / direct frequency key-in and station memory tuning.
- Dual alarm clock function.
- Mute function.
- Auto tuning storage function (ATS) for FM / AM / shortwave.
- 100 station memories (each band 100 memories, 500 customizable).
- 12K AM output socket.
- Line in socket (can be used as a speaker for MP3 players).
- Line out socket (radio broadcasting can be transferred to other devices).
- External antenna jacks for both AM and FM.
- USB (5 V) outlet for MP3 or mobile phone charging function.
- AC/DC 6V power supply included.

G2 Reporter

\$139.95 – HRO Price

The G2 Reporter is your take-anywhere international news source. Less than 1 inch thick, the G2 makes a perfect travel companion. Enjoy AM, FM, FM stereo and continuous shortwave from 2.3 to 23 MHz. (No SSB) The dual sound speaker system adds a new dimension to your radio listening, and the line input jack allows you to play your personal audio device through the G2.

A built in MP3/WAV recording system lets you make verbal notes via the built-in mike or external mike, and even record your favorite radio shows directly off the air. Easily store your favorite stations via the 248 channel memory system with memory scan, auto tuning storage and also keypad entry.

A built-in micro-SD card port on the bottom panel supports up to 16 GB to let you play your own music library through the G2. The mini USB 2.0 jack facilitates charging and field upgrades. The G2 can be set to operate



in English, Chinese, Japanese, Korean, French, German, Italian, Dutch, Portuguese, Spanish, Swedish, Czech, Polish, Russian, Turkish, Hebrew and Thai. Other features include: clock timer, lock, built-in rechargeable 3.7V 1050 mAh lithium battery, tuning indicator and backlit LCD with adjustable contrast.

The radio comes with USB cable, mini stereo to mini stereo audio cable, cloth carry pouch and printed multi-language Owner's Manual. Please note that this radio requires a USB port, such as can be found on a PC to recharge the built-in battery. The USB port is merely for charging the radio and not powering the radio. 7.5 x 3.5 x 0.8 inches; 9.6 oz. (190x90x21mm; 272 g).

G8 Traveler II

\$49.95 – HRO Price



G3

Global Traveler

\$99.95 – HRO Price

The Global Traveler G3 is an AM / FM / shortwave receiver with aircraft band, SSB (150-30000 KHz), RDS (Radio Data System) and Synchronous Detector. (118-137MHz).

- Dual conversion PLL digital tuner with digital LCD display showing frequency, time, sleep time and symbols for sleep time and alarm activation.
- 700 randomly programmable memories for all frequencies.
- Compact and light weight design.
- Synchronous detector with selectable side band.
- Clock, sleep times, and alarm function.
- 3.5 mm headphone jack (earphones not included).

- FM / MW / SW / LW.
- Keylock function.
- Auto / manual tuning.
- Auto tuning storage (ATS) function
- 3.5 mm headphone output.
- Digital tuning with digital frequency readout (LCD).
- Local + world timer settings.
- Sleep timer and alarm clock
- Snooze light.
- DC input (6v).
- 5.3" X 3.4" X 1"
- Weighs 7.1 oz.



- Digital radio data system (RDS) on FM shows frequency, call letters, song title, date, and messages on the display when available.
- Telescoping antenna for FM and SW reception.
- External jack for SW, FM and aircraft band antennas.
- Power source is 4 AA batteries (not included).

ATS-909X \$249.95

HRO Discount Price

Sangean's "new" and much improved ATS-909X World Band FM-Stereo / LW / AM / SW / AUX PLL synthesized portable receiver is the flagship of the Sangean line of receivers. It packs performance and features generally found in more expensive table top receivers, into a very compact and stylish package. It features wide-band AM/FM coverage from long wave, medium wave and short wave and has three programmable wake timers available. The clock displays even when the radio is tuning and has 42 world city times stored. The new enlarged LCD display also features a bright white LED, a signal strength indicator and battery life indicator. The radio has an AM wide / narrow filter, FM mono / stereo selector switch, SSB (single side band): USB / LSB 40 Hz tuning step, AM RF gain control.



- 406 Presets.
- 5 tuning methods: auto scan, direct frequency, manual, memory recall, rotary.
- Auto tuning system.
- DSP decoder.
- Automatically searches for strongest signal.
- ATS auto tuning system.
- Large LCD screen.
- Rechargeable battery.
- Alarm: radio or buzzer.
- 2 editable city names.
- SSB (LSB and USB).
- FM stereo, LW, AM, SW.

Now Available in Black



Weather Alert

CL-100 Table-Top S.A.M.E. Weather Hazard Alert Radio \$79.95

HRO Discount Price



The CL-100 can receive all NOAA reports to let people know about severe weather advisories, watches, warnings, conditions, civil emergencies, hazards, and evacuation details. The CL-100 can respond to emergency alert tones by activating a built-in audio or an external visual alarm. It features S.A.M.E. technology, the primary trigger for activating the US Hazards and EAS (Emergency Alert System) used by commercial radio, television and cable TV outlets.



ATS-505P \$97.95

HRO Discount Price

The world's first affordable professional digital multi-band receiver offers the performance and features of more expensive table model receivers. It has continuous coverage, auto-memory scan, SSB reception, auto tuning system, human wake system, illuminated display, dual time, 12/24 hour display, AM/FM stereo/SW receiver, auto/manual search, tone control, keypad entry, 9/10 kHz switch.

Visit the HRO
Secure Web Site:
hamradio.com

Internet Radio

WFR-20 \$239.95

HRO Discount Price



The WFR-20 Wi-Fi Internet radio offers direct access to over 6000 Internet radio stations and 21242 on-demand streams. Using the radio or your web browser and computer, you can search for specific stations. Up load the stations to "My Stations" folder for quick access. Don't have a computer? The WFR-20 provides access as a stand-alone unit. All you need is a broadband internet connection. Has large 3-line display, extra large clock display, 12 / 24 hour clock format, 4 alarm timers, aux input for MP3 player.

Musical System

DDR-63 \$399.95

HRO Discount Price

Phone NOT
included



Sangean's DDR-63 All-in-One Tabletop Wooden Cabinet Musical System transforms your listening experience. In one package you have Internet Radio / FM-RDS / Aux In / CD / USB / SD / iPod Cradle.

Made for iPods, this system allows you to listen to your favorite tunes using the integrated docking station. The DDR-63 has access to more than 15,000 internet stations worldwide via Wi-Fi and Ethernet LAN connections, CD Player, USB / SD Card and FM Tuner letting you listen to your favorite recorded music and talk radio.

It also connects to your Home Ethernet or wireless network and streams a wide selection of media formats. It supports media formats with MP3, WMA, AAC, FLAC, WAV and Real Audio formats (Real Audio for Internet Radio only; CD, USB and SD play MP3 and WMA files only). The CD player also plays CD-DA disc.

The tuner features a memory for ten presets on FM, 10 station presets on Internet Radio and a telescoping antenna for better reception. Wake up to the radio, buzzer, line-in source, or iPod. It also has a sleep timer. The DDR-63 is easy to use with a large, easy to read LCD display and the touch screen buttons provide access to all controls.

Mobile Scanner

Home Patrol

\$CALL

HRO Price



- Enter your zip code to see a list of agencies you will hear in your local area.
- Hear emergency calls, weather, spotters, and public safety activities.
- Touch screen entry on 3.5 inch color LCD screen.
- Multiple set up options using zip code, city, GPS (not included) or let the unit automatically determine its location.
- AM / NFM / FM.
- 4 NiMH 2300 mAh batteries included.
- While on the road you can monitor road and traffic conditions through local agency broadcasts.
- Plug in an optional GPS and the unit monitors channels wherever you are.
- Portable battery operation.
- AC / DC adapter included.
- Covers 25-53.995 MHz, 136-512 MHz, 758-960 MHz.
- MicroSD type memory slot.

Mobile Trunking Scanner with GPS Support and APCO-25



BCD-996XT

\$CALL – HRO Price

- 6000 dynamically allocated channels.
- Location-based scanning.
- TrunkTracker IV (Motorola APCO 25 digital, EDACS, LTR).
- 100 system quick keys.
- Dual color display.
- Temporary lockout.
- Dangerous crossing, dangerous road and POI alert.
- DIN-E mounting.
- Multi-site trunking support.
- Close-Call™ RF capture technology.
- Public safety scanner.
- PC control/programming (free download).

BearTracker Mobile Trunking Scanner with GPS Support



BC-T15X

\$CALL – HRO Price

- Frequency coverage 25-512, 758-960 (cell band blocked), 1240-1300 MHz.
- 2500 dynamically allocated channels.
- Up to 400 systems.
- TrunkTracker III.
- Location-based scanning.
- 100 system quick keys.
- BearTracker™ warning system.
- Close Call™ RF capture technology.
- Dangerous crossing, dangerous road and POI alert.
- Public safety scanner.

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

BCD-396XT TrunkTracker IV Handheld

\$CALL

HRO Price



- 25,000 dynamically allocated channels.
- TrunkTracker IV (Motorola APCO 25 Digital, Motorola, EDACS, LTR).
- Close Call™ RF capture.
- Fire tone-out. Alpha tagging. Search with scan.
- 100 quick key random access.
- Continuous coverage - 25 MHz to 1.3 GHz (cellular blocked).
- DCS/CTCSS rapid decode.

Scanner Software

BuTel

Scanner software is essential for the proper programming of today's complex scanners. Butel's user-friendly and feature-rich software allows for both programming, and with the PRO versions, control and logging for scanners. Limited versions offer programming only at a special price. Auto-download frequencies and trunking with a RadioReference subscription for most versions. Requires Windows 98 or later. Basic and Pro versions are available as noted.

HRO Prices

Basic version (B) \$39.95
Pro version (P) \$69.95
Limited version (L) \$29.95

Uniden Bearcat Software

ARC-XT (B) (P) BC346XT, 396XT, 15XT, 996XT
ARC996 (B) (P) Bearcat BCD-996T
ARC396 (B) Bearcat BCD396T
ARC246 (B) Bearcat 246T
ARC330 (B) (P) Bearcat BR330T
ARC250 (B) (P) BC250, 296, 785, 796
ARC780 (B) Bearcat 780XLT

GRE Software

ARC300 (L) PSR300, PSR400
ARC500 (B) PSR500, PSR600 (includes control)

AOR Receivers

ARC8200 AR8200 \$69.95

Icom Receivers

ARC2 R-2 \$29.95
ARC3 R-3 \$39.95

Emergency Lights



LiteFlare

Emergency Flasher

LF-01

LiteFlare is an economical alternative to the road flare. Unlike single-use disposable incendiary flares, each reusable Lite Flare operates for more than 400 hours. One LiteFlare replaces more than 750 (30 minute) incendiary flares. Just insert two fresh "AA" batteries.

The Lite Flare operating mechanism is enclosed inside a rugged military-grade, high impact plastic case that resists water, snow, dust, rough pavement – even the weight of an automobile. LiteFlare is safe to use and won't ignite fuel or clothing. LiteFlares produce no toxic residue or fumes to harm the environment or the user.

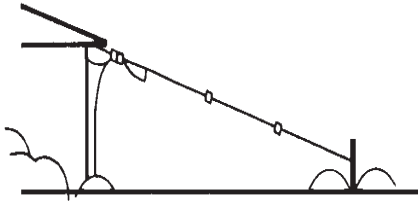
Lite Flare's flashing red light is visible for more than two miles during darkness! It can also be used during foggy or heavy overcast daytime conditions or stormy weather. To operate, just flip the switch and the LiteFlare begins flashing.

HRO Price \$9.95

LiteFlare 3 Pack LFR-3 HRO Price \$24.99

SWL Antennas

ALPHA DELTA



DX-SWL

The DX-SWL is tuned for the most popular SWL bands (13, 16, 18, 19, 21, 25, 31, 41, 49, 90 and 120 meters). It can be used as a multi-band transmit antenna with the appropriate antenna tuner. Length is 60 feet. Requires a single support. Standard coax connects antenna to your radio. Feed point is 50 ohms. SO-239 connection.

HRO Price \$119.95

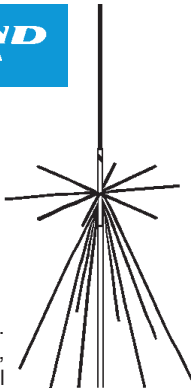
DX-ULTRA

The multi-element DX-ULTRA has extremely low-noise performance. Tapered wing design allows broadband operation. Configure as dipole, inverted vee, or sloper. Covers MW, tropical, SW, government, military, embassy, maritime, aircraft, and commercial frequencies. 80 feet long. Made with ISO-RES inductors and parallel wire elements. Uses the Delta-C center insulator, Delta-CIN end insulators, and 12 gauge solid copper wire with grey PVC insulation. Elements are separated by grey PVC rod. **HRO Price \$159.95**

DIAMOND ANTENNA

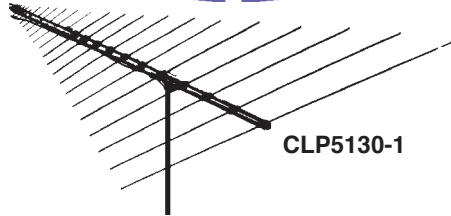
D-130J D-130NJ Super Wideband Discone

Monitor 25-1300 MHz. Transmit on 50, 144, 430, 1200 MHz. All stainless steel. Input power 200 Watts maximum. Impedance: 50 ohms. VSWR: 1.5:1. Length: 1.7 meters. Mounts on 1" to 2" masts. D-130 UHF and D-130NJ Type-N connector. **HRO Prices D-130J \$104.95; D-130NJ \$104.95**



Call for Quotes

Log Periodic



CLP5130-1

The CLP5130 antennas are high gain, wide band VHF/UHF log periodic beams for horizontally polarized base station use. Covers amateur bands from 50-1300 MHz, FM broadcasting, scanning, VHF / UHF TV, air band communications, government and business bands.

Forward gain is 10 to 12 dB – 10 to 16 times the gain of a nondirectional discone type antenna. The VSWR is less than 2.0:1 across the band. The high-quality aluminum antennas have a boom design that allows movement of the phasing line. Distortions in the vertical and horizontal planes are minimized and element adjustment is not necessary. The boom-to-mast bracket is made of a lightweight and rugged magnesium alloy.

Create Antennas

	CLP 5130-1	CLP 5130-2
Frequency	50-1300 MHz	108-1300 MHz
No. Elements	23	19
Power PEP	500W	500W
Forward Gain	10-12 dBi	10-12 dBi
Front/Back	15 db	15 db
Longest element	9' 10"	4' 6"
Boom length	5' 9"	4' 6"
HRO Price	\$459.95	\$369.95

Wideband

SCANNER MASTER

Spectrum Force Mag Mount

This wideband antenna comes with a BNC or SMA connector. Covers 25-1300MHz. Height is 17" including base. BNC fits most scanners. **HRO Price \$19.95 / BNC
HRO Price \$19.95 / SMA**



SWL Guide

Worldwide Listening Guide



NEW!

**5th Edition
by John Figlio**

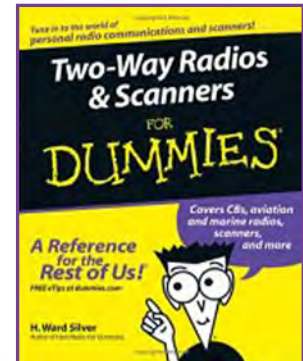
The expanded 5th Edition WL Guide explains radio listening in all of today's formats – "live," on-demand, WiFi, podcast, terrestrial, satellite, internet, digital, and, of course, AM, FM and SW. Includes a comprehensive program guide to what can be heard how, when, and where. Spiral bound to open in a flat, easy-to-use format. **HRO Price \$24.95**

Scanner Books

HRO stocks many books with frequencies for localities around the country. Contact your nearest HRO for details.

Two-Way Radios & Scanners for Dummies

HRO Price \$21.99



Scannerstuff Southwest Frequency Directory (10th Edition)



The most up-to-date directory for Arizona has 256 pages of scanner frequencies, codes, aircraft, businesses, and talk-groups for public safety. Organized by county, it includes detailed coverage of the new Phoenix/Mesa digital trunked radio system. **HRO Price: \$29.99**

BOOKS

Radio Manuals



Nifty Mini-Manuals

Mini-Manuals are fully laminated, spiral bound booklets, 4.25 x 8 inches, providing simplified step-by-step instructions for all your radio's features. These short-form manuals are smaller, more durable, and easier to use than manuals normally supplied with a radio.

Kenwood

Model	Mini-Manual Description	HRO Price
NIFTY-TH-F6A	Mini Manual TH-F6A	\$21.95
NIFTY-TH-D72A	Mini Man + Ref Card	\$24.95
NIFTY-TH-K20/K40	Ref Card TH-K20/40	\$5.95
NIFTY-TM-271/281	Ref Card TM-281	\$5.95
NIFTY-TM-D700A	Mini Manual TM-D700A	\$16.95
NIFTY-TM-D710A	Mini Manual TM-D710A	\$19.95
NIFTY-TM-G707A	Ref Card for TM-G707A	\$5.95
NIFTY-TM-V71A	Mini Manual TM-V71A	\$18.95
NIFTY-TS-2000	Mini Manual TS-2000	\$18.95
NIFTY-TS-480S/HX	Mini Manual TS-480	\$18.95
NIFTY-TS-570D/S	Mini Manual TS-570	\$16.95
NIFTY-TS-590	Mini Manual TS-590	\$20.95

MFJ

Model	Mini-Manual Description	HRO Price
NIFTY-MFJ259B	Mini Manual MFJ-259B	\$12.95
NIFTY-MFJ269	Mini Manual MFJ-269	\$12.95

Miscellaneous

Model	Mini-Manual Description	HRO Price
NIFTY-MM-BandPlan	Amateur Radio Band Plan	\$10.95
NIFTY-D-STAR-BOOK	E-Z Guide to D-Star Operations Book	\$13.95
NIFTY-DXGUIDE	DX Field Guide Book	\$15.95
NIFTY-HT-STAND	HT Stand	\$34.95
NIFTY-PSK31-BOOK	E-Z Guide to PSK31 Operations	\$12.95
NIFTY-RADIOIMG	Radio Monitoring Guide	\$15.95
NIFTY-ECHO-LINK-BOOK	Guide to Echolink	\$13.95
NIFTY-K3	Mini Manual Elecraft K3	\$22.95
NIFTY-KX1	Ref Card Elecraft KX1	\$5.95
NIFTY-KX3	Mini Manual Elecraft KX3	\$20.95
NIFTY-P3	Mini Manual Elecraft P3	\$10.95

CQ DX World Guide

by Franz Lagner, DJ9ZB



This full color guide has entries for more than 300 DX "entities." Includes geographical information about each country, WAZ and ITU zones, ITU callsign allocations and amateur prefixes. Each listing also includes a map and flag, plus information on the country's licensing agency and national amateur radio society. As appropriate, listings include call areas, IOTA information and representative QSL cards. Available in book or CD formats. HRO Price \$42.95

Yaesu / Wouxun

Model	Mini-Manual Description	HRO Price
NIFTY-F1900	Mini Manual FT-1900	\$16.95
NIFTY-F2000/D	Mini Manual FT-2000	\$20.95
NIFTY-F250R	Ref Card FT-250R	\$5.95
NIFTY-F270R	Ref Card FT-270R	\$5.95
NIFTY-F350R/AR	Mini Manual FTM-350	\$22.95
NIFTY-F2900	Mini Manual FT-2900	\$16.95
NIFTY-F760R	Ref Card FT-60R	\$5.95
NIFTY-F450D	Mini Manual FT-450D	\$20.95
NIFTY-F7dx5000/D/MP	Mini Manual FTdx-5000	\$22.95
NIFTY-F7800R	Mini Manual FT-7800	\$16.95
NIFTY-F7900R	Mini Manual FT-7900	\$16.95
NIFTY-F817ND	Mini Manual FT-817	\$16.95
NIFTY-F7857/D	Mini Manual FT-857	\$16.95
NIFTY-F7880R	Mini Manual FT-8800	\$16.95
NIFTY-F7890R	Mini Manual FT-8900	\$16.95
NIFTY-F7897/D	Mini Manual FT-897/897D	\$16.95
NIFTY-F7950	Mini Manual FT-950	\$20.95
NIFTY-F7M10R	Mini Manual FTM-10R	\$16.95
NIFTY-VX3R	VX-3R Dual Card	\$7.95
NIFTY-VX6R	Mini Manual + Ref Card VX6R	\$20.95
NIFTY-VX7R	Mini Manual + Ref VX7R series	\$20.95
NIFTY-VX8R	Mini Manual + Ref Card	\$24.95
NIFTY-VX80R	Mini Manual + Ref Card	\$22.95
NIFTY-VX8GR	Mini Manual + Ref Card	\$22.95
NIFTY-KGUV3	Ref Card KGUUV 1/2/3	\$5.95
NIFTY-KGUV6 Amateur	Ref Card KGUUV6 series	\$5.95

Alinco

Model	Mini-Manual Description	HRO Price
NIFTY-DJ-G29	Mini Manual DJ-G29	\$22.95
NIFTY-DJ-G7T	Mini Manual DJ-G7T	\$22.95
NIFTY-DX-SR8	Mini Manual DX-SR8T	\$16.95
NIFTY-DJ-V57	Mini Manual DJ-V57	\$19.95
NIFTY-DR-135/235/435	Ref Card DR-135/235/435	\$5.95

Icom

Model	Mini-Manual Description	HRO Price
NIFTY-IC-706MKIIG	Mini Manual IC-706MKIIG	\$16.95
NIFTY-IC-718	Mini Manual IC-718	\$16.95
NIFTY-IC-746PRO	Mini Manual IC-746PRO	\$20.95
NIFTY-IC-80AD	Mini Manual + Card IC-80AD	\$24.95
NIFTY-IC-92AD	Operating Manual IC-92AD	\$24.95
NIFTY-IC-91A/AD	Mini Manual + Card IC-91	\$22.95
NIFTY-IC-R20	Mini Manual + Card IC-R20	\$19.95
NIFTY-IC-2820H	Mini Manua IC-2820H	\$20.95
NIFTY-IC-7410	Mini Manua IC-7410	\$20.95
NIFTY-IC-7000	Mini Manual IC-7000	\$20.95
NIFTY-IC-7200	Mini Manual IC-7200	\$16.95
NIFTY-IC-756PROIII	Mini Manual IC-756PROIII	\$20.95
NIFTY-IC-7600	Mini Manual IC-7600	\$24.95
NIFTY-IC-7700	Mini Manual IC-7700	\$24.95
NIFTY-IC-7800	Mini Manual IC-7800	\$24.95
NIFTY-IC-9100	Mini Manual IC-9100	\$22.95
NIFTY-IC-910H	Mini Manual IC-910H	\$20.95
NIFTY-ID-880H	Mini Manual ID-880H	\$22.95



Gordon West

Study with the Best!

Part Number Description HRO Price

Study Manuals

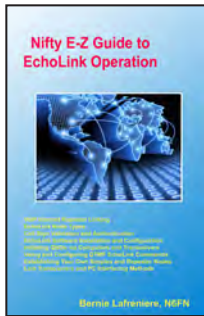
GWTM	Technician Class Book	\$20.95
GWTW	Technician Audio Theory Course on 4 CDs	27.95
NCS	Tech Book plus Software Package	29.95
GWGM	General Class Book	24.95
GWGW	General Audio Theory Course on 4 CDs	29.95
GWEM	Extra Class Book	19.95
GWEW	Extra Audio Theory Course on 6 CDs	35.95
ECS	Extra Book plus Software Package	35.95
HOS	W5YI Ham Operator Software – no books	27.95
HOSB	W5YI Ham Operator Software plus 3 books	85.95
GUS	General Book + software	34.95

Morse Code Study Materials

GW05	Morse Code 0-5 wpm	39.95
	8 CDs	
GW13	Morse Code 6-16 wpm	39.95
	8 CDs	
GW20	Morse Code 10-28 wpm	39.95
	8 CDs	
GWCT	CW Refresher Course 0-5 wpm, 2 audio CDs	14.95

Other Books

GSE	Getting Started in Electronics	19.95
MINI-1	Mini Notebook, Vol. 1: timer, op amps, optoelectronic circuits and projects	12.95
MINI-2	Mini Notebook, Vol. 2: science and communication circuits and projects	12.95
MINI-3	Mini Notebook, Vol. 3: electronic sensor circuits and projects	12.95
MINI-4	Mini Notebook, Vol. 4: electronic formulas, symbols and circuits	12.95
BELC	Basic Electronics	19.95
BDIG	Basic Digital Electronics	17.95
BCE	Basic Communications (analog) Electronics	17.95
GROL	Get Your Commercial	49.95
+RADAR	Radio License – Book	
GRSP	Get Your Commercial	79.95
+RADAR	Radio License – Book plus W5YI Study Software Package	



Nifty E-Z Guide to EchoLink™ Operation

This ideal reference for those getting into EchoLink shows how to make contacts using your

- computer or DTMF equipped transceivers.
- Straight forward, simple explanations for both beginning & experienced users.
 - Voice over Internet technology.
 - EchoLink computer users, simplex links, and repeaters.
 - Installing and using EchoLink software.
 - Call sign validation and authentication.
 - RF Link transceiver requirements.
 - Establish RF EchoLink simplex and repeater nodes.
 - Create a node by interfacing your transceiver to a computer.
 - Configure EchoLink's sysop setup menus.
 - Add EchoLink capability to a repeater.
 - Numerous clear illustrations.

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QSL Holders

QuickView
HRO Price: \$9.95



International
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Flash Cards

Flash-and-Pass

Study for your license exams with these easy-to-use Flash and Pass study cards.

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Ham Adventures

The Road Home by Andrew Baze

Do you love an adventure? Especially when it includes ham radio in emergency communications, disasters and peril? Do you know any young adults who might be interested in radio? Would you like to learn more about disaster preparedness? Entertaining and informative for young and old alike, this well-reviewed book will hook you from the beginning and take you on a boy and father's trek back from the wilderness to the broken city where the rest of the family waits, unaware of the other danger lurking on their doorstep. **HRO Price \$12.99**



Personal Emergency Communications

by Andrew Baze



Do you want to be prepared for the next power outage or a natural disaster? This book is written for everyone – no radio expertise required! It will tell you how to make your own realistic, simple emergency communication plan. When the chips are down, what will you do if your cell phone, land-line, and the Internet don't work? This book has the answer! **HRO Price: \$14.99**

Reference Book



Pocket Reference Fourth Edition

This concise all-purpose reference has hundreds of tables, maps, formulas, constants & conversions. More than 200 new pages and thousands of updates! **HRO Price \$12.95**

Ham Radio For Dummies

Hams do cool things like talking to folks around the world and helping with communications during emergencies. If hamming it up sounds like fun, here's the scoop, including licensing requirements and how to set up a station. And if you're already licensed, this book will help you start sounding (and feeling) like a pro!

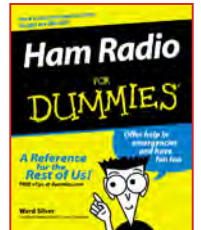
The Dummies Way

- "Get in, get out" information.
- Explanations in plain English.
- A dash of humor and fun.
- Tear-out cheat sheet.
- Icons and other navigational aids.
- Top ten lists.

Discover how to:

- Set up a radio shack.
- Learn ham jargon.
- Be a ham on the go.
- Communicate on air.
- Prepare for license exam.
- Help in an emergency or natural disaster.

HRO Price \$21.99



Tower Guide

Up the Tower

The Complete Guide to Tower Construction
by Steve Morris, K7LXC



This is the first tower book of its type ever published. It includes

abundant information on all aspects of tower construction, use, and care from the foundation to the antenna installation. Steve Morris gathered this collection of invaluable information during his years as a professional installer of amateur and commercial towers. Read about regulatory concerns, guy wires, safety equipment, and more. **HRO Price: \$35.00**

Ham Magazines

- | | |
|----------------|--------------------------|
| CQ | CQ Monthly |
| CQVHF | CQ VHF Quarterly |
| Popular | Popular Communications |
| QST | QST Monthly |
| MT | Monitoring Times Monthly |

CQ Publications

- ARC2014** Amateur Radio Calendar 2014
- UBAUBAU** Understanding Building & Using Baluns & Ununs
- LMOA** Lew McCoy on Antennas
- DXWG** DX World Guide
- VHF PROP** VHF Propagation



ARRL BOOKS

The ARRL Handbook for Radio Amateurs



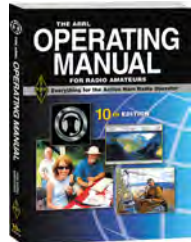
Celebrate ARRL's first 100 years of advancing the art and science of radio with this commemorative ARRL Centennial Edition of the Handbook.

This edition has been extensively revised to reflect the latest technology and innovation in the field of applied electronics and communications. Written by radio amateurs, for radio amateurs and other experimenters, engineers, and students.

Hardcover only is gold foil embossed and serial numbered. Major new edition: components, new projects, and latest technology. Fully searchable CD-Rom included.

Thorough coverage of theory, references, and practical projects. Here is an unmatched source for building receivers, transceivers, power supplies, RF amplifiers, station accessories and antennas. Now with more antenna projects and a 10-W, 60-meter SSB transceiver! Something for all skill levels.

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The most complete book about Amateur Radio, written to guide you through every mode and technology.

Indispensable information to sharpen the skills of all active hams. It's full of technical to public service information that every ham needs to know, from newcomers to the more experienced. **HRO Price: \$27.95**



ARRL MAPS

AWM World Map (Azimuthal)
GRID ATLAS Grid Locator Atlas
GRID MAP Grid Locator Map
MONA Amateur Radio Map of North America

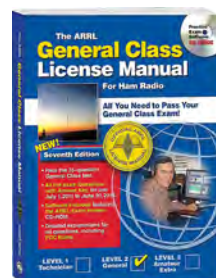
ARRL LISTINGS

DXCC LIST Official ARRL DXCC List
LB Log Book
RD Repeater Directory



Ham Radio License Manual

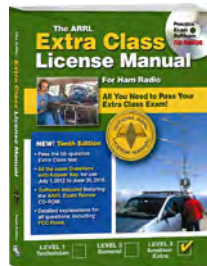
Includes the latest complete question pool with answer key and explanations for use to pass the 35-question license test. Designed for self-study or classroom use. Take as many randomly-generated practice exams as you want. Discover the unique mix of technology, public service, convenience, and fun that makes up ham radio. **Retail \$29.95 includes CD-ROM practice exam software for Microsoft Windows®.**



General Class Ham Course The fastest way to General Class License 7th Edition

Package includes book and CD-Rom with all course material and practice exams as well as the ARRL General Class License Manual. Each topic is divided into bite-sized lessons with visual animations, colorful illustrations, and audio. Take short on-screen quizzes based on the official exam questions to help reinforce your learning. Take practice exams again and again!

System Requirements: Compatible with Microsoft Windows® Vista / XP / 2000 / NT / 98 / 95 or Apple OS X. **HRO Price \$29.95**



Extra Class License Manual Revised 10th Edition

Here is your ticket to every privilege granted to Amateur Radio Operators. Our expert instruction leads you through all the knowledge needed to pass the 50-question exam: rules, specific operating skills and more advanced electronics theory. To upgrade to Extra Class you must already hold a General Class license then pass a written examination. Take randomly generated practice exams using questions from the actual exam question pool. **HRO PRICE \$29.95 includes CD-ROM practice exam software for Microsoft Windows®.**

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GEN Q&A (4th ed) \$17.95

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Getting Started With Ham Radio

Get on the air now! A guide to your first Amateur Radio station. Select radios and antennas, explore operating modes, and assemble your station. **HRO Price: \$19.95**

Hamspeak — A Dictionary for Radio Amateurs

A collection of terms and phrases commonly used in the ham radio community. More than 1,300 entries! **HRO Price: \$15.95**

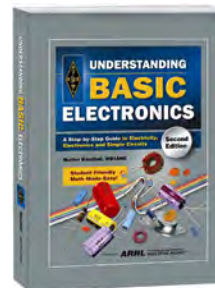


ARRL Electronics

Understanding Basic Electronics

— A Step-by-Step Guide to Electricity, Electronics and Simple Circuits

2nd Edition By Walter Banzhaf, WB1ANE



Beginners and those with a foundation in basic electronics will enjoy the small module format of each chapter—allowing readers to digest (or skim) "bite-sized" chunks of learning material. Real-world examples and clear illustrations make the study of electronics interesting and fun! A handful of small "kitchen table" projects are included to help bring abstract concepts to life. **HRO PRICE \$29.95**

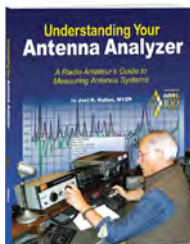
ARRL BOOKS FOR AMATEURS

Understanding Your Antenna Analyzer

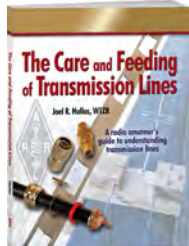
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NEW!

A radio amateur's guide to understanding antenna analyzers.



Care and Feeding of Transmission Lines



Transmission lines are an integral part of the art of radio. Properly selected and installed transmission lines lead to the success of a radio station transmitting the signal over short distances to your antenna with minimum signal loss.

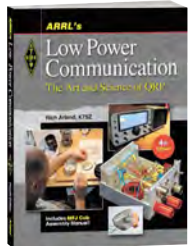
This book provides a guide to understanding transmission lines by introducing the various types of lines available and identifying the key parameters of coaxial as well as balanced lines. You will learn how to select the transmission line, install it and maintain it. The different types of connectors is also discussed. **HRO Price \$24.95**

MORE ARRL TECHNICAL BOOKS

EMRFD	Experimental Methods in RF Design
HK	Hints and Kinks (18th ed.)
HRE	Hands on Experiments
ITRFD	Intro to Radio Freq. Design
LBD	Low Band DXing (5th ed.)
RFE	RF Exposure and You
RFI	Radio Frequency Interference

Low Power

Low Power Communication



The Art and Science of QRP

New 4th Edition

by Richard Arland, K7SZ

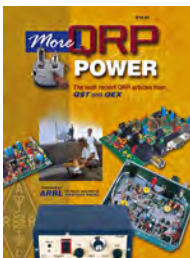
Here's the low-down on low power operating, from selecting gear, to advanced operating techniques, antennas, emergency communications,

solar power, and more! 208 pages.

HRO Price: \$27.95

More QRP Power

Here are more projects and articles for low power radio operating, from the pages of QST and QEX magazines: construction practices, transceivers, transmitters, receivers, accessories, and antennas. **HRO Price: \$19.95**

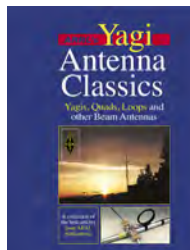
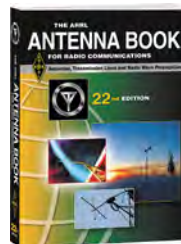


Antennas

Antenna Book

22nd Edition

Hams and professionals will find projects and practical information on designing, building, and installing almost any imaginable type of antenna. Select and use the proper feed line and antenna tuner. Expanded coverage of low frequency antennas. Greatly expanded coverage of elevation angles needed for world-wide HF propagation. New chapters cover the fundamentals, including the effects of irregular local terrain, plus more information on mobile and maritime antennas. Software included (MAC and PC). **Retail \$49.95**



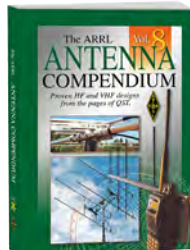
Yagi Antenna Classics

This collection of articles covering all types of beam antennas was taken from QST, QEX, NCJ and other ARRL publications. Written by some of the best known authors on the subject, the articles provide the reader with a historical perspective, novel ideas and computer optimized designs. **HRO Price: \$17.95**

Antenna Compendium

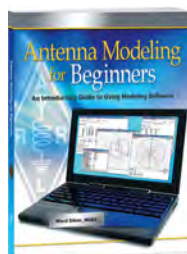
Volume 8

Inside are 60 articles from QST magazine featuring practical ideas, tips, and some of the best antenna projects. You'll find designs such as the Handy Yagi Antenna, Compact 40 Meter HF Loop, 20 and 40 Meter verticals on "autopilot," and much more. **HRO Price \$24.95**



Antenna Modeling for Beginners

With the software that is now available you can model your antenna design and optimize performance for your application. It provides a detailed introduction to the popular EZNEC modeling program. **HRO Price: \$34.95**



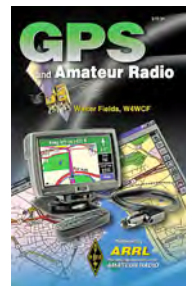
MORE ARRL ANTENNA BOOKS

ACVOL5	Antenna Compendium Vol. 5
ACVOL6	Antenna Compendium Vol. 6
ACVOL7	Antenna Compendium Vol. 7
RSGB-ANT	H.F. Antenna Book
RSGB-WIRE	Wire Antennas

GPS and Amateur Radio

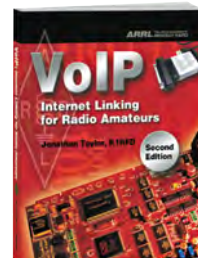
by Walter Fields, W4WCF

Explore GPS: its history, how it works, and navigating with a GPS receiver. Learn how to make use of GPS technology for direction finding and public service. **HRO Price: \$18.95**



VoIP: Internet Linking for Radio Amateurs

Your complete guide to the most widely-used VoIP systems used by hams; with particular attention to EchoLink and the Internet Radio. **HRO Price: \$21.95**



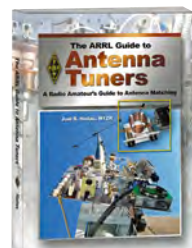
Radios to Go!



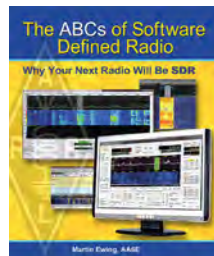
There is a wealth of features in the latest handhelds. Many of the features are hidden and it is not easy to get full benefit from your investment. This publication is an essential guide. **HRO Price: \$15.95**

Guide to Antenna Tuners

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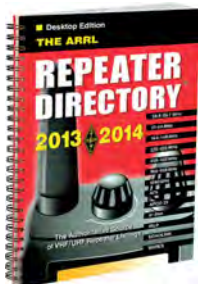
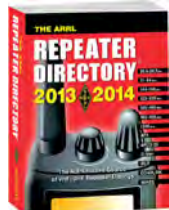


ARRL 2013-14

Repeater Directory

- Thousands of FM voice and ATV repeater frequencies.
- Latest directory of frequency coordinators.
- Coverage of North, Central, South America, and some listings in Europe and the Middle East.
- Now including IRLP (Internet linked) nodes.

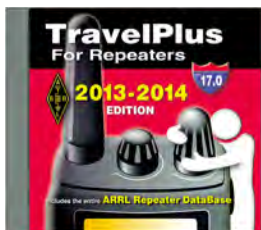
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ARRL CD-ROMs



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search for articles by title and author, search by specific year and issue, and browse individual articles. Available sets: 1990-94; 1985-89; 1980-84; 1975-79; 1970-74; 1965-69; 1960-64; 1950-59; 1940-49; 1930-39. Each set is indexed. Requires Windows 3.1 or higher. **Each set \$39.95**

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Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

FIND A HAM



Radio Amateur Callbook

**CD-ROM 2013
HRO Price \$49.95**

This is the most extensive radio amateur directory on the market. Incorporating both the North American and International editions of the world's most respected callbooks, it provides more than 1.6 million listings in more than 250 countries, islands, and dependencies. By including several countries not found in other directories, the Callbook offers unmatched world coverage.

tories, the Callbook offers unmatched world coverage.

- Windows / DOS platform.
- Data display by callsign, last name, city, license class, issue, and expiration dates.
- Search U.S. stations by callsign, last name, and city.
- Search international by callsign, last name, city. Text search by name, street, city, province, or region after selecting country.
- Unique sound output of Morse code alphabet can be used by the blind or anyone who wants to learn Morse code.

- Windows clipboard tool for single label or applications. Import data into logging spread sheet, word processor, or label printing program. Logging program interface available.
- Listings of clubs, "Then and Now" call letter changes, military, and silent keys.
- Text files listing prefixes by countries (40 zones), DXCC countries list, census of amateur prefixes, QSL bureaus, reciprocal operating agreements, 10-meter beacons, 6-meter beacons, international "Q" signals, and much more.

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- Add your own notes to any callsign.
- Print entire field search results (US records only).
- Calculates short and long path distance and bearing.
- Choose display font and color.
- Shows country flag and map.
- Shows CQ, ITU zone, continent.
- History list shows each call sign entered..
- View and search internet profiles for more than 35,000 hams.
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- Search for club, military, RACES, vanity and silent keys.
- Latitude/longitude for more than 90% of US and DX addresses. US lat/long is calculated from the street address for precision down to a few hundred feet.
- Easy to use main menu.
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- Edit information, change addresses, add new records, delete edited records, add email addresses, phone numbers, fax numbers and your own notes.



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TECHNICIAN CLASS



Technician Class book for the 2010-2014 entry level exam! Gordo reorganizes the Q&A into logical topic groups for easy learning! Key words are highlighted in his explanations to help you understand the material for test success. Web addresses for more than 125 helpful, educational sites.

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Get your FCC commercial radio licenses and add valuable credentials to your resume!

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8 pool for the RADAR Endorsement. Many employers require these licenses for jobs in marine, aero, safety, and municipal positions. Gordo and his team have written clear explanations for all the Q&A to make studying for these exams educational and fun. If you're an Extra Class ham, many of the technical/math questions will look familiar to you. Fully-illustrated to aid your learning. Book includes a searchable CD-ROM with all FCC Rules for Parts 2, 13, 23, 73, 80 and 87.

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General Class book Upgrade to the HF bands with Gordo & W5YI! Gordo's manual for 2011-2015 reorganizes all the questions into logical topic groups for easier learning. His explanations include highlighted key words to help you remember the material for test success. Companion CD is full of great operating tips!

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Extra Book & Software Package

Study at your computer and take practice exams as the W5YI software scores your results and highlights areas that need further study. Includes explanations from Gordo's book. Free Part 97 Rule Book.

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by Forrest M. Mims
This is a complete electronics course in 128 pages! This famous electronics inventor teaches you the basics, takes you on a tour of analog and digital components, explains how they work, and shows how they are combined for various applications. Includes circuit assembly tips and 100 electronic circuits you can build and test. Forrest has written dozens of books, hundreds of articles, invented scientific devices and travelled to the Amazon for NASA, and loves to share his knowledge with eager students!

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Celebrate ARRL's first 100 years of advancing the art and science of radio with this commemorative **ARRL Centennial Edition of The Handbook**. Always updated, this edition has been extensively revised to reflect the latest technology and innovation in the field of applied electronics and communications. Written by radio amateurs...for radio amateurs, and other experimenters, engineers and students.

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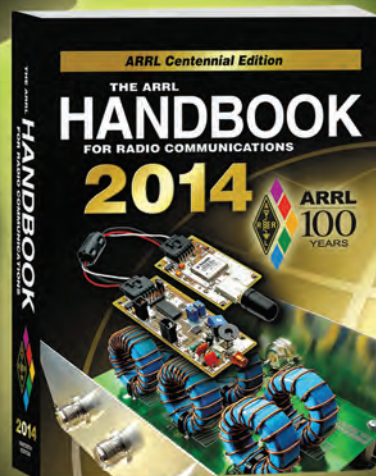
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- Optional Remote Separation Kit
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- VHF/UHF Dual Band
- 200 Channels
- Dual Display w/ Full Keypad
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- Dual Slot 2 Hour Rapid Charger
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Target Markets:

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On Sale: \$174.⁹⁹



Amateur Radio KG-UV3D

- VHF/UHF Dual Band
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On Sale: \$119.⁹⁹



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IC-2820H

FEATURE-RICH 2m + 70cm MOBILE + OPTIONAL GPS RECEIVER

D-STAR **optional**

- 50/15/5 Watt Output
- RX: 118–549.995, 118–173.995, 375–549.999, 810–999.990MHz*
- 522 Alphanumeric Memory Channels
- One Touch Reply Function
- Digital Voice/GPS (Optional UT-123 Required)
- Low Speed Data (Optional OPC-1529R Required)



ID-880H

ENTRY-CLASS 2m + 70cm DIGITAL MOBILE GO DIGITAL ON 23cm

D-STAR **ready**

- 50/15/5 Watt VHF/UHF
- FM, AM (Receive only), DV
- RX: 118–999.99MHz*
- 1052 Alphanumeric Memory Channels
- Free Programming Software†

† www.icomamerica.com/amateur/DSTAR for details about free software

ID-1

GO DIGITAL ON 23cm

D-STAR **ready**

- 10 Watt on 23cm (FM, DV, DD)
- RX: 1240–1300MHz*
- 100 Alphanumeric Memory Channels
- USB Rig Control, Ethernet Plug for DD
- Black Box Operation
- Remote Control Head, Remote Speaker and Cables Included
- PC Software Included



NEW ID-51A **D-STAR ready**

2m + 70cm VHF/UHF DUAL BAND PORTABLE

- 2m + 70cm FM Analog & Digital*
- 5/2.5/1.0/0.5/0.1 Watt Output
- RX: 88–174, 380–479MHz + AM Broadcast*
- Repeater Directory (Near Repeater)
- 1304 Alphanumeric Memory Channels
- Built-in GPS Receiver
- IPX7 Submersible



D-PRS™

IC-80AD 2m + 70cm DUAL BANDER

D-STAR **ready**

- 5/2.5/0.5/0.1 Watt VHF/UHF
- FM, FM-N, AM (Receive only), WFM (Receive only), DV
- RX: 0.495–999.990MHz*
- 1052 Alphanumeric Memory Channels
- Li-ion Battery
- Free Programming Software†

† www.icomamerica.com/amateur/DSTAR for details about free software



IC-92AD

2m + 70cm MILITARY RUGGED AND SUBMERSIBLE

D-STAR **ready**

- 5/2.5/0.5/0.1 Watt Output
- RX: 0.495–999.990, 118–174, 350–470MHz*
- 1304 Alphanumeric Memory Channels
- Optional GPS Speaker Mic (HM-175GPS)
- IPX7 Submersible



ID-31A

UHF/70cm + D-STAR

D-STAR **ready**

- 5/2.5/0.5/0.1 Watt Output
- RX: 400–479MHz*
- 1252 Alphanumeric Memory Channels
- Built-in GPS Receiver
- IPX7 Submersible



Information & Downloads

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- Touch Screen with Built-in Speaker
- 32-bit IF-DSP
- External GPS Option

D-STAR ready



IC-2300H 2m

Powerful, smaller and simple to use.

- 65/25/10/5 Watt Output
- RX: 136–174MHz*
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- 4.5W Audio Output
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- MIL-STD 810 G Specifications



IC-V8000 2m

Your ultimate 2m mobile experience.

- 75 Watt Output
- RX: 136–174MHz*
- 207 Alphanumeric Memory Channels
- Icom's DMS Scanning
- CTCSS Encode/Decode with Tone Scan
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Improved - The HD Series

IC-V80 HD 2m

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Classic analog operation, updated for today's ham

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Impressive loud audio, even in noisy environments

Powerful, long-lasting battery and recharger



BP-265



BC-193



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EVENT HORIZON of DX



The main receiver has an IP3 in the +40 dB class, and the sub receiver is the already famous TS-590S receiver. Capable of receiving two signals at once, on different bands. 7-inch and 3.5-inch color TFT displays allow displaying of independent contents. Simplification of complex operations at a glance. Make no mistake, this is not a toy. Finally a serious tool is available for getting the very most from your hobby, of course it's a Kenwood.

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TS-990S

Dual TFT Display & Dual Receiver HF/50 MHz Transceiver



- Covers the HF and 50 MHz bands.
- High-speed automatic antenna tuner.
- USB, Serial and LAN ports.
- Various PC applications (free software): ARCP-990 enabling PC control, ARHP-990 enabling remote control, and ARUA-10 USB audio driver.

- Clean 5 to 200 W transmit power through the 50 V FET final unit.
- Built-in RTTY and PSK.
- Three Analog Devices 32-bit floating-point arithmetic DSPs.
- DVI output for display by an external monitor (main screen display only).



www.kenwoodusa.com



Scan with your phone to
download TS-990S brochure.



ADS#12613

System Fusion

System Fusion joins digital and conventional FM communication into a single multiple function system

By using the revolutionary System Fusion, the user no longer needs to choose between digital or conventional FM; instead, we can use whichever system is best suited for the situation.

AMS (Automatic Mode Select)

- Instantly recognizes whether the received signal is C4FM digital or conventional FM.

FM Friendly Digital

- System Fusion can be used in multiple ways, for digital communication, for conventional FM communication and even internet communication.

New Functions Enabled by C4FM Digital Communication

Digital Group Monitor (GM) Function

- Automatically checks whether members registered to a group are within the communication range.



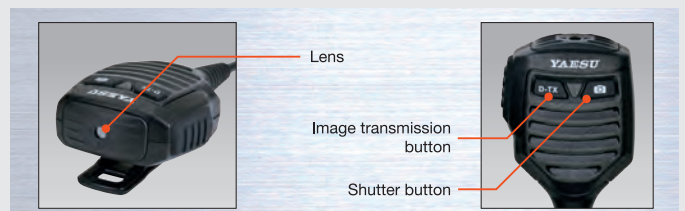
Snapshot Function (Image Data Transmission)

- Image data can be displayed on the screen.
- Image data can be sent easily to other C4FM FDMA digital transceivers.



Smart Navigation Function

- Real-time navigation function enables location checking at any time.
- Backtrack function for returning to your departure Point.



System Fusion Lineup



144/430 MHz DUAL BAND
C4FM/FM DIGITAL REPEATER

DR-1

- Three digital modes and a Analog mode
- Emergency Operation: Supports operation on an emergency battery



Exciting New Amateur Digital Transceiver



C4FM FDMA 144/430 MHz DUAL BAND
5W DIGITAL/FM TRANSCEIVER

FT1DR

- Three digital modes and a Analog mode
- Automatic Mode Select (AMS) Function
- Snapshot Picture Taking Capability
- Digital Group Monitor Function
- Smart Navigation Function



Equipped with advanced touch panel operation
and full-color TFT large-scale display



C4FM FDMA 144/430 MHz DUAL BAND
50W DIGITAL/FM TRANSCEIVER

FTM-400DR

- Three digital modes and a Analog mode
- Automatic Mode Select (AMS) Function
- 3.5-inch Full Color Touch Panel Operation
- Snapshot Picture Taking Capability
- Digital Group Monitor Function
- Smart Navigation Function



Amateur Radio Internet
Linking Kit

WIRES-X

HRI-200

In addition to the convenient and
easy to use digital function,
advanced VoIP wireless WIRES-X

YAESU
The radio

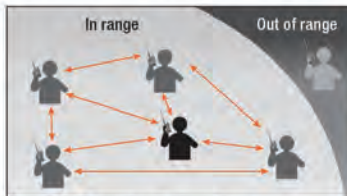
YAESU USA
6125 Phyllis Drive, Cypress, CA 90630 (714) 827-7600

Specifications subject to change without notice. Some accessories and/or options may be standard in some areas. Frequency coverage may differ in some countries. Check with your local Yaesu dealer for specific details.

New Functions Enabled by C4FM Digital Communication

Digital Group Monitor (GM) Function

- Automatically checks whether members registered to a group are within the communication range.
- This function can be used to send messages data between group members.



Group Monitor Function



Smart Navigation Function

- Real-time navigation function enables Location checking at any time.
- Backtrack function that starts navigation facing a registered point.



Snapshot Function (Image Data Transmission)

- Image data can be displayed on the screen.
- Image data can be sent easily to other C4FM FDMA digital transceivers.



Additional operating and support features

Wideband Receive Capability

Covers 108 MHz - 999.990 MHz (A(Main) / B(Sub) Band), VHF Marine, Aircraft, Public service channels, etc.

Hands-free operation

Hands-free operation is available by using the optional wireless Bluetooth® unit and headset.

(Optional Bluetooth® unit (BU-2) and Headset (BH-2A) are required.)



C4FM 144/430 MHz DUAL BAND
5 W DIGITAL/FM TRANSCEIVER

FT1DR

- Digital Group Monitor (GM) Function
- Smart Navigation Function
- Snapshot Function (Image Data Transmission)
- Built-in GPS with Antenna in the top
- Wideband Receive (504 kHz - 999.99 MHz)
- Equipped with microSD Card Slot

For latest Yaesu news, visit us on the Internet:
<http://www.yaesu.com>

Specifications subject to change without notice. Some accessories and/or options may be standard in some areas. Frequency coverage may differ in some countries. Check with your local Yaesu dealer for specific details.

YAESU
The radio

YAESU USA
6125 Phyllis Drive, Cypress, CA 90630 (714) 827-7600

Exciting New C4FM/FM Digital Mobile Transceiver



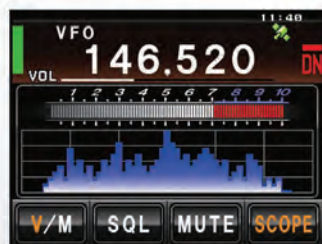
C4FM
Digital ClearVoice
Clear and Crisp Voice Technology

C4FM 144/430 MHz DUAL BAND
50 W DIGITAL/FM TRANSCEIVER

FTM-400DR

- Digital Group Monitor (GM) Function
- Smart Navigation Function
- Snapshot Function (Image Data Transmission)
- Built-in GPS with Antenna in the Controller
- Wideband Receive (108 MHz – 999.99 MHz)
- Equipped with microSD Card Slot

Advanced visibility and operability with full color touch panel Operation

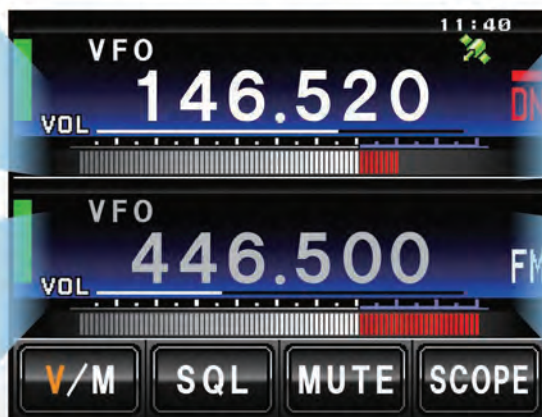


Band Scope Screen



Altitude Screen

3.5-inch full color
touch panel operation



The icon symbols, multi-function key display and pop-up messages are all displayed in high-resolution color thanks to the full-color, high luminance TFT liquid crystal screen.



Smart Navigation Screen



Frequency Direct Input Screen

Field Gear That Goes The Distance!

FT-450D

**HF/50 MHz 100 W Easy to Operate
All Mode Transceiver**

- Illuminated Key Buttons
- 300Hz / 500Hz / 2.4 kHz CW IF Filter
- Foot Stand
- Classically Designed Main Dial and Knobs
- Dynamic Microphone MH-31 A8J Included



FT-857D

The World's Smallest HF/VHF/UHF Mobile Transceiver

- Ultra-Compact Package
- Ideal for Mobile or External Battery Portable Work
- Wide Frequency Coverage
- Optional Remote-Head
- High-Performance Mobile Operation



FT-897D

**HF/VHF/UHF Portable Operation
Powerful Transceiver**

- The Ultimate Emergency Communications Radio
- Rugged, Innovative Multi-Band
- Operates on the SSB, CW, AM, FM, and Digital Modes
- Wide Frequency Coverage
- 20-Watt Portable Operation Using Internal Batteries
- 100 Watts When Using an External 13.8-Volt DC Power Source



FT-817ND

**The Ultimate Backpack, Multi-Mode
Portable Transceiver**

- Self-Contained
- Battery-Powered
- Covering the HF, VHF, and UHF Bands
- Provides up to Five Watts of Power Output
- SSB, CW, AM, FM, Packet, or SSB-based Digital Modes like PSK31



YAESU
The radio

YAESU USA

6125 Phyllis Drive, Cypress, CA 90630 (714) 827-7600

<http://www.yaesu.com>

HF/50MHz 100W Transceiver

FT DX 1200

This medium-price HF Transceiver Excels on all fronts. The High Frequency Design Technology it has inherited, ensures "Best in Class Performance".
The Outstanding Operability is Perfect for the DX Scene.



Superior triple conversion receiver, and optimum gain distribution at each IF stage will eliminate out of band unwanted signals.

The 1st IF frequency is set at 40 MHz and is protected by selectable 3 kHz, 6 kHz and 15 kHz roofing filters, which effectively attenuate interfering signals.

Similar to the high end series Yaesu transceivers, it uses the 32-bit high speed floating point DSP, TMS320C6727B by Texas Instruments, for its IF DSP.

The acclaimed superior Yaesu DSP algorithm is highly effective in weak signal processing and enhancement.

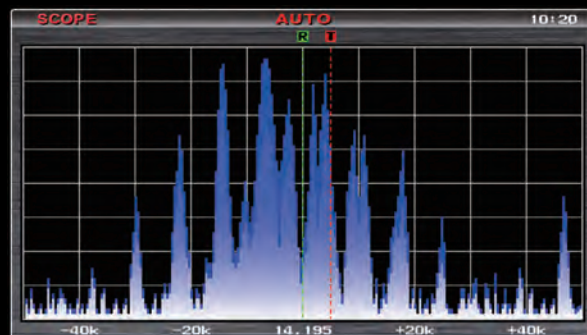
The Full Color, 4.3 inch TFT display on the left side of the front panel, has a wide viewing angle and provides excellent visibility. It beautifully displays the various functions unique to this high class HF transceiver.

An optional built-in FFT-UNIT supports advanced functionality, including the AF-FFT Scope, RTTY/PSK31 Encode/Decode, CW Decode and CW Auto Zero-in.

For latest Yaesu news, visit us on the Internet:
<http://www.yaesu.com>



The Full Color 4.3 inch TFT display



Spectrum-Scope (Full Screen display)

HF/50 MHz 100 W Transceiver

FTDX 3000

New Crystal Roofing Filters provide ultimate weak signal receiver performance in crowded, strong signal environments



The amazing Crystal Roofing Filter performance

The Down conversion 9 MHz 1st IF frequency receiver construction, can realize narrow 300 Hz (optional), 600 Hz and 3 kHz bandwidth roofing filters.

Outstanding receiver performance, the heritage of the FTDX5000!

The high dynamic range IP3 performance that was realized and proven in the FTDX5000.

IF DSP provides effective and optimized QRM rejection

Independent Frequency display

The newly developed LCD has a wider viewing angle and higher contrast.

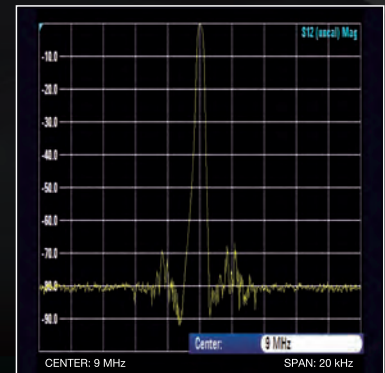
4.3-inch Large and wide color LCD display with high resolution

High Speed Spectrum Scope built-in

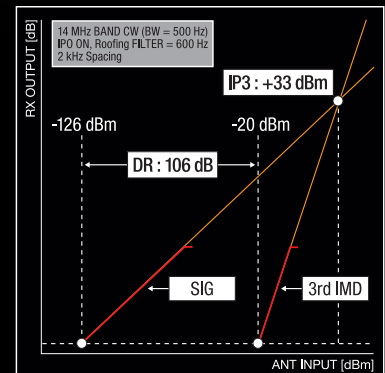
AF SCOPE display and RTTY/PSK encoder/decoder

Other features

The specialized Receiver amplifier for 50 MHz is built in / Three antenna connectors are provided / The "ANT-3" terminal may be assigned to "RX-only" / Signal output for an external receiver and the 9 MHz IF output are furnished / High speed Automatic antenna tuner built in / Optional μ -tune unit available / USB interface equipped



Characteristics of the Crystal Roofing Filter (300 Hz)



3rd Order Dynamic Range / IP3 (2kHz Spacing)

Reliable FM 5W Single Band Handheld Transceiver

FT-252

VHF FM TRANSCEIVER

FT-257

UHF FM TRANSCEIVER

Compact and High Performance



FT-252

2 m
Single BAND



FT-257

70 cm
Single BAND

NEW!

- New Ergonomic design and Large Backlit LCD Display for better operation
- 5 Watts of Stable RF Power
- 800 mW of Loud Audio for noisy field operations

- ATS (Automatic Transponder System) "beeps" when moving out of communication range
- 200 Memory Channels for Serious users
- Water Protection - IPX5 Rating

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Not All Cable Assemblies are Created Equal... See the ABR Difference.



2213A RG213/U MIL-SPEC
 Non-contaminating Direct-Burial Ultra-Violet Resistant Jacket.
 W/SILVER-TEFLON PL259 & WEATHERPROOF HST each end.

Attenuation per 100ft	Power Rating	Efficiency%
0.6dB @ 10MHz	3.43kW	87%
1.0dB @ 30MHz	1.95kW	79%
1.4dB @ 50MHz	1.5kW	73%
2.4dB @ 150MHz	.83kW	57.1%
4.5dB @ 450 MHz	.45kW	35.8%

Part #	Length/Ft
2213A-PL-3	3
2213A-PL-25	25
2213A-PL-50	50
2213A-PL-75	75
2213A-PL-100	100
2213A-PL-150	150



1.5" long
 w/Pull Tabs-
 Protects PL259
 Connectors.

**Sold in
 packages of 10**



218XATC RG8X (240UF) Foil+TC Braid
 Non-contaminating Direct-Burial Ultra-Violet Resistant Jacket.
 W/SILVER-TEFLON PL259 & WEATHERPROOF HST each end.

Attenuation per 100ft	Power Rating	Efficiency%
0.9dB @ 10MHz	2.16kW	80%
1.4dB @ 30MHz	1.24kW	69%
2.1dB @ 50MHz	0.96kW	62%
3.6dB @ 150MHz	0.55kW	43.5%
6.3dB @ 450MHz	0.31kW	23.2%

Part #	Length/Ft
218XATC-PL1.5	1.5
218XATC-PL-3	3
218XATC-PL-6	6
218XATC-PL-9	9
218XATC-PL-12	12
218XATC-PL-18	18
218XATC-PL-30	30
218XATC-PL-40	40
218XATC-PL-50	50
218XATC-PL-75	75
218XATC-PL-100	100
218XATC-PL-125	125
218XATC-PL-150	150
218XATC-PL-200	200



25400F 400-FLEX (RG8/U TYPE) FLEXIBLE LOW LOSS
 Non-contaminating Direct-Burial Ultra-Violet Resistant Jacket.
 W/SILVER-TEFLON PL259 & WEATHERPROOF HST each end.

Attenuation per 100ft	Power Rating	Efficiency%
0.5dB @ 10MHz	4.83kW	89.8%
0.8dB @ 30MHz	2.77kW	83%
1.1dB @ 50MHz	2.14kW	78.5%
1.8dB @ 150MHz	1.22kW	65.4%
3.3dB @ 450MHz	0.69kW	47.3%

Part #	Length/Ft
25400F-PL-1.5	1.5
25400F-PL-3	3
25400F-PL-6	6
25400F-PL-12	12
25400F-PL-18	18
25400F-PL-35	35
25400F-PL-50	50
25400F-PL-75	75
25400F-PL-100	100
25400F-PL-150	150



24400 400-Type Solid Copper Cover Aluminum
 w/N Male plugs each end. Complete
 w/Weatherproof Heat Shrink Tubing (WP-HST)

Attenuation per 100ft	Power Rating	Efficiency%
0.4dB @ 10MHz	5.00kW	91.4%
0.7dB @ 30MHz	3.33kW	85.6%
0.9dB @ 50MHz	2.57kW	81.7%
1.5dB @ 150MHz	1.47kW	70.2%
2.7dB @ 450MHz	.83kW	53.6%

Part #	Length/Ft
24400-NM-50	50

24600 600-Type Solid Copper Cover Aluminum
 w/N Male plugs each end. Complete
 w/Weatherproof Heat Shrink Tubing (WP-HST)

Part #	Length/Ft
24600-NM-100	100

24600 600-Type Solid Copper Cover Aluminum
 w/PL259 plugs each end. Complete
 w/Weatherproof Heat Shrink Tubing (WP-HST)

Attenuation per 100ft	Power Rating	Efficiency%
0.2dB @ 10MHz	5.00kW	94.6%
0.4dB @ 30MHz	5.00kW	90.7%
0.5dB @ 50MHz	4.24kW	88.2%
1.0dB @ 150MHz	2.41kW	80.1%
1.7dB @ 450MHz	1.35kW	67.3%

Part #	Length/Ft
24600-PL-100	100

24600UF LMR600-Flexible Stranded Copper
 w/N Male plugs each end. Complete
 w/Weatherproof Heat Shrink Tubing (WP-HST)

Attenuation per 100ft	Power Rating	Efficiency%
0.3dB @ 10MHz	5.00kW	93.5%
0.5dB @ 30MHz	4.55kW	88.9%
0.7dB @ 50MHz	3.51kW	85.9%
1.2dB @ 150MHz	1.99kW	76.5%
2.1dB @ 450MHz	1.12kW	62.2%

Part #	Length/Ft
24600UF-NM-100	100

Cable Selection Guide

Suggested Applications

218XATC Series: Lightweight mobile, Dipole Antennas,
 as jumpers between equipment in tight places. Very
 Flexible.

JACKET

- Ultra Violet Resistant, ● Direct Burial.

2213A Series: Bands below 30MHz w/linear amplifiers.
 Solid Polyethylene Dielectric is robust and will stand up
 to HF high power over a long period of time (i.e. corona
 effect).

Flexible.

JACKET

- Ultra Violet Resistant, ● Direct Burial.

25400F Series: Great for frequencies 144MHz and
 higher. Double Shield=Shielding Effectiveness<90dB.
 Very Flexible.

JACKET

- Ultra Violet Resistant, ● Direct Burial.

24400 Solid Center Conductor, use with
 stationary applications.

24600 Solid Center Conductor, use instead of
 Helix™.

24600UF Stranded Center Conductor,
 Thermoplastic Rubber Jacket, flexible for a large
 cable.

This is a guide only. Exceptions may apply.

Direct your cable questions to:
info@abrind.com

WWW.ABRIND.COM



1" Tinned Copper Flat Ground Braid. 7ga 85/Amps
 w/1/4" Stud Ring Terminals. Quick &
 Easy Grounding Terminations.

Part #	Length/Ft
235-5X-20	20
235-5X-1	10
235-5X-5	5
235-5X-3	3
235-5X-1	1



1/2" Tinned Copper Flat Ground Braid. 10ga 53/Amps
 w/#10 Stud Ring Terminals. Quick &
 Easy Grounding Terminations.

Part #	Length/Ft
233/2-4X-12	12
233/2-4X-10	10
233/2-4X-5	5
233/2-4X-3	3
233/2-4X-1	1

ABR
INDUSTRIES™
 American Built & Reliable

POWER SUPPLIES



Switching Power Supply

Super compact, lightweight power supply is great for portable operations. Provides 32 A peak, 30A continuous. Variable output 5-15 VDC. Preset voltage function. Patent pending noise offset circuit removes pulse noise. Short circuit protection. Convenient front panel connections. Cigarette plug socket. **HRO Price \$Call**

DIAMOND



Switching Mode DC Power Supply GZV4000

The GZV4000 switching mode DC power supply has a 40 amp continuous rating at 100% duty cycle. The supply has variable voltage from 5-15 VDC using a voltage control knob with a center detent at 13.5 VDC. There is overload and short circuit protection with current feedback at approximately 42 amps and temperature protection with a variable speed fan. An AC line filter provides EMI protection. The meter selector allows monitoring of voltage and current. Power and overload indicators are included.

Connect your rig easily with front panel DC terminals and a cigarette lighter jack. The unit has an internal 8 ohm speaker. Operates on 120 VAC \pm 20%, 50-60 Hz. Ripple and noise is less than 8mV rms. **HRO Price: \$169.95**

240 VAC models also available for GZV4000.

GZV6000

60 amp version. 100V-240V **HRO Price: \$369.95**

Amp-Matching Power Supply



HP-460

The HP-460 is a matching power supply for the HL-450B and HL-350VDX amplifiers. It features a

light weight design with 60A maximum (8 hours continuous). It operates on 100-140 VAC. **HRO Price \$CALL**



Switching Supply



SS-30DV

Switching Power Supply 25 Amp

This power supply is set up for 230 VAC input as shipped from the factory. For 115 VAC applications, set the recessed 115 / 230 input select switch located on the rear of the power supply into the proper position. Positions are identified on the switch. Use a small screwdriver to slide the switch into position. No adjustment is necessary for either 50 or 60 Hz input.

- Front connection: 2 sets of Power-pole® connectors.
- Rear connection: 1/4 inch binding posts that also accept banana plugs, 1/4 inch ring terminals or compression connections.
- Illuminated power switch.

Electrical specifications:

- Input range: 100-120 VAC or 200-240 VAC, 50/60Hz (switchable).
- Output voltage: 14.1 VDC fixed.
- Output amperage: 25 continuous, 30 surge.
- Internal protection: thermal, over current.
- Internal input fuse: 6.3 amps at 115 VAC.
- Ripple peak-to-peak max. <100 mVpp.
- Noise peak-to-peak max. <100 mVpp.
- Operating temperature rating: 0 – 50 °C.
- Storage temperature: -20 – 85 °C.

Physical dimensions and materials:

- Weight: 3.0 lbs. (48 oz.).
- Overall dimensions: 6.1 x 5 x 2.5 in. (154 mm long, 127 mm wide, 63 mm tall).
- Fan: quiet internal cooling fan.
- Machined metal case front bezel.

HRO Price \$109.95

Variable Supply



SPS-30DM

Variable Desk Top 30 Amp Power Supply

This dual metered digital (amps/volts) power supply features user variable output (5~16 VDC) by adjusting the front mounted knob, or fixed 14.1 VDC output. Rear power output via 1/4" binding posts. Supplies up to 25 amps continuous, 28 amps surge.

- Dual metered digital (amps/volts) power supply.
- User selectable variable output voltage from 5~16 VDC by adjusting the front mounted knob or fixed output at 14.1 VDC.
- Rear connection: 1/4 inch binding posts that also accept banana plugs or compression connections.

Electrical specifications:

- Input range: 100-120 VAC or 200-240 VAC, 50/60 Hz (user switchable).
- Output voltage: variable 5~16 VDC.
- Output amperage: 25 continuous, 28 surge.
- Polarity ground: negative.
- Internal protection: thermal, over current.
- Internal input fuse: 6.3 amps at 115 VAC.
- Ripple peak-to-peak max. <100 mVpp.
- Noise peak-to-peak max. <100 mVpp.
- Operating temperature rating: 0 ~50 °C.
- Storage temperature: -20 ~ 85 °C.
- Meter Tolerance: \pm 3%

Physical dimensions and materials:

- Weight: 3.7 lbs. (59 oz.).
- Overall dimensions: 6.1 x 5 x 2.5 in. (154 mm long, 127 mm wide, 63 mm tall).
- Fan: quiet internal cooling fan.
- Machined metal case front bezel.

HRO Price \$159.95

All of Astron's solid-state electronically regulated Power Supplies have fold-back current limiting to protect from excessive current, and a heavy duty heat sink. Output voltage: 13.8 VDC \pm .05 volts. 220 V supplies available on special order at slightly higher price.

RS-A Series Standard power supply with on/off switch. Adjust voltage internally.

SL Series Slim Line design for low-profile looks.

MODEL RS-35M



RS-M Series Power supplies with front meters. One is for voltage and the other current.

SS Series High efficiency switching supplies specially filtered for use with communications equipment for all frequencies including HF. Heavy duty design, low profile, light weight and EMI filter.

VS-M Series Variable power supplies with separate volt and amp meters. Adjustable output: 2-15 volts.

RM Series 19" x 5 1/4" rack-mount power supplies available with or without meters and may be variable. The new RM-60 comes with or without meters.

Power Supplies

Brand	Model	Cont.Duty 13.8 VDC	Intermit Duty	Height in	Width in	Depth in	Weight lbs
Alinco	DM-330MVT	30 A	32A	2.75	7	7	5
Astron	RS-4A	3 A	4 A	3.75	6.5	9	5
	RS-7A	5 A	7 A	3.75	6.5	9	9
	RS-10A	7.5 A	10 A	4	7.5	10.75	11
	RS-12A	9 A	12 A	4.5	8	9	13
	RS-20A	16 A	20 A	5	9	10.5	18
	RS-35A	25 A	35 A	5	11	11	27
	RS-50A	37 A	50 A	6	13.75	11	46
	RS-70A	57 A	70 A	6	13.75	13.75	48
	RS-12M	9 A	12 A	4.5	8	9	13
	RS-20M	16 A	20 A	5	9	10.5	18
	RS-35M	25 A	35 A	5	11	11	27
	RS-50M	37 A	50 A	6	13.75	11	46
	RS-70M	57 A	70 A	6	13.75	12.12	48
	RM-50A	37 A	50 A	5.25	19	12.5	50
	RM-60A	50 A	55 A	7	19	12.5	63
	RM-35M	25 A	35 A	5.25	19	12.5	38
	RM-50M	37 A	50 A	5.25	19	12.5	50
	RM-60M	50 A	55 A	7	19	12.5	63
	VS-20M	16 A	20 A	5	9	10.5	20
	VS-35M	25 A	35 A	5	11	11	29
	VS-50M	37 A	50 A	6	13.75	11	46
	SL-11A	7 A	11 A	2.75	7.62	9.95	11
	SL-15R	12 A	15 A	2.75	7.62	9.95	14
	SS-10	7 A	10 A	1.125	6	9	3.2
	SS-12	10 A	12 A	1.375	6	9	3.4
	SS-18	15 A	18 A	1.375	6	9	3.6
	SS-25	20 A	25 A	2.875	7	9.375	4.2
	SS-30	25 A	30 A	3.75	7	9.625	5
Diamond	GZV4000	40 A	42 A	4.5	8.25	13	8
	GZV6000	60 A		4.5	8.25	13	8
Daiwa	SS-330W	30 A	33 A	4	5	11	4.8
	SS-505	50 A	55 A	4.3	8.5	11	8.25
Icom	PS-125	25 A	25 A	3.7	4.4	11.3	6.6
	PS-126	26 A	26 A	3.7	4.4	11.3	6.6
Kenwood	KPS-15	23 A	24 A	2.2	7	8.25	4
Power Werx	SS-30DV	25 A	30 A	2.5	5	6.1	3
	SPS-30DM	25 A	28 A	2.5	5	6.1	3.7
Samlex	SEC1212	10 A	12A	2.2	7	8.25	3
	SEC1223	23 A	24 A	2.2	7	8.25	4
	SEC1223BBM	23 A	24 A	2.2	7	8.25	4
	SEC1235	30 A	35 A	2.1	10.4	7.1	5
	SEC1235M	30 A	35 A	2.1	10.4	7.1	5
Yaesu	FP-1023	23 A	24 A	2.2	7	8.25	4
	FP-1030A	25 A	30 A	9.8	5.9	9.5	20.9

* Internal Supply
(220 volt versions of some models available at additional cost by special order. Contact HRO for details.)

Switching Power Supplies



Daiwa switching power supplies are one-third the weight and one-half the size of conventional supplies.

Daiwa models can be used for DC motors that require peak starting currents and will accept input voltage from 90-130V.

Switching supplies can create pulse noise, but Daiwa engineers have isolated any noise and moved it out of the amateur bands creating a super quiet power supply.



SS-330W: 30 amp

- 30 amps continuous current (33 peak).
- Voltage adjustable: 5-15V.
- Dual meters, amp and voltage.
- Automatic cooling fan built in.
- Weight: ONLY 4 lbs 14 ozs.
- Dimensions: 5" x 4" x 11" (approx).
- Ripple voltage: less than 10 mV.
- Short circuit protected.
- Carry handle for portability.

HRO Price \$169.95

SS-505: 50 amp

- 50 amps continuous current (55 peak).
- 50 amps available at all output voltages.
- Voltage adjustable: 5-15V.
- Binding posts on back, cigarette-lighter socket, spring loaded connectors on front.
- Voltage fluctuation: less than 1.5%.
- Dual purpose meter – amp and voltage.
- Automatic cooling fan built in.
- Weight: ONLY 8 lbs 4 ozs.
- Dimensions: 8.5" x 4.3" x 11" (approx).
- Ripple voltage: less than 5 mV.
- Short circuit protected.
- Carry handle for portability.
- Perfect for industrial, lab, or ham use.

HRO Price \$399.95

Call for Quotes



samlexamerica

POWER SUPPLIES

Samlex is *THE* power supply choice for radio manufacturers around the world. On the market for more than 20 years, these compact switching power supplies offer reliable power at a price consumers can afford.

For Base Stations



SEC-1223

The perfect lightweight companion for 100 Watt transceivers. Input 100-130 VAC; Output: 13.8 VDC @ 23 Amps; UL approved. Also works on 200-240 VAC input with a simple jumper change. Safety features: Current limiting; Short circuit protection; Overvoltage protection; Quiet temperature controlled cooling fan.

- 3 year warranty - "no questions asked."
- Dim 7" w x 2.1" h x 7.1" d; 4.5 lbs.

HRO Price \$125.95



SEC-1223BBM

Samlex has combined the reliability of the SEC-1223 power supply with the reassurance of the BBM-1225 battery backup module. This 23-amp unit automatically provides uninterrupted DC power from an external backup battery to your critical load in the event of an AC power outage. Once AC power is restored, the SEC-1223BBM will continue to seamlessly supply DC power to the load while providing a current-limited charge to the backup battery. Input: 100 - 130 VAC. Output: 13.8 VDC. **HRO Price \$129.95**



SEC-1212

Same form factor as the 1223, this model is highly filtered to provide clean power to HF, VHF and UHF radios. Input: 100-130VAC; Output: 13.8 VDC @ 12Amps; UL approved. Also works on 200-240 VAC input with a simple jumper change. Safety features: Current limiting; Short circuit protection; Overvoltage protection; Quiet temperature controlled cooling fan.

- 3 year warranty - "no questions asked."
- Dim 7" w x 2.1" h x 7.1" d; 4.5 lbs.

HRO Price \$101.95

Switching Power Supplies



SEC-1235M

This unit includes built-in volt and amp meters. 100-130 VAC, 13.8 VDC.

- Best power supply value available today.
- Advanced switch-mode technology.
- Reliable power with minimum weight and size.
- Circuit innovations minimize output voltage ripple and RFI.
- Input voltage can be set at 120 VAC or 240 VAC (internal jumper setting).
- Front panel ammeter and voltmeter.
- Detachable power supply cord.
- UL listed to both USA & Canadian safety standards; FCC compliant.

HRO Price \$143.95



SEC-1235

Provides the same as the SEC-1235M without the Voltmeter and Ammeter displays.

HRO Price \$133.95

DC to AC Inverters



PST-UL Inverters

Samlex's new PST-UL series of pure sine wave inverters convert 12 VDC to 120 VAC at 60 Hz. Features include: Dual GFCI protected outlets, temperature controlled cooling fan and extremely low interference. Commercial grade design is suitable for heavy duty loads, long periods of continuous operation and for emergency back up power.



HRO Prices:

PST-300-12 \$159.95

PST-600-12 \$225.95

Battery Chargers



NEW!

SEC-1230UL

Automatic Charger

120 VAC 12 VDC 30A

This highly efficient commercial-grade charger for lead acid batteries offers user-selectable 2 or 3 stage charging and 120 or 230 VAC, 50 / 60 Hz. Includes a voltage meter and universal protection circuit for short circuit, overload, or reverse battery polarity. Charge 3 banks of batteries at once. UL safety certified. **HRO Price \$219.95**

- For all types of lead acid batteries.
- Charge with a battery load or stand alone.
- Voltage meter display.
- Use as a power supply or DC UPS.
- * Charge 3 banks of batteries at once - no isolator necessary.
- † Half-power mode reduces maximum charging current to half the rated capacity, allows for safe charging of lower capacity batteries.
- † Temperature compensated charging circuit prevents under / overcharging of battery if temperature varies extensively.
- Lightweight.
- Quiet operation.
- 2 year warranty.

Model	Input	Out put	Charging Current
SEC-1215UL*	120 VAC	12 VDC	15A
SEC-1230UL*	120 VAC	12 VDC	30A
SEC-2415UL*	120 VAC	24 VDC	15A
SEC-1250UL†	120 VAC	12 VDC	50A
SEC-2425UL†	120 VAC	24 VDC	25A
SEC-1280UL†	120 VAC	12 VDC	80A
SEC-2440UL†	120 VAC	24 VDC	40A

Charger Accessory

Remote Control 900-RC

- The remote panel can be used to power ON / OFF and also monitor the charging status from a remote location.
- Half -power mode allows smaller capacity batteries to be charged safely at a lower current.
- Comes with 33' cable.
- For use with SEC-1250, 1280, 2425, 2440.

HRO Price \$34.95

BATTERIES / CHARGERS

WizardOne Charger-Analyzer

MH-C9000



Shown with
Optional
Batteries

8-Cell One Hour Charger

MH-C801D



Shown with
Optional Batteries

MAHA

NiMH Rechargeable Battery Cells

Model	Volts (Vdc)	Capacity (Mah)	Description	HRO Price
MH-4AA270	1.2	2700	4 pack "AA" size NiMH Cells	\$16.95
MH-2AAA1000	1.2	1000	2 pack "AAA" size NiMH Cells	\$3.99
MH-4AAA1000	1.2	1000	4 pack "AAA" size NiMH Cells	\$14.95
MH-RAA-I4	1.2	2400	4 pack "AA IMEDION NiMH" cells	\$16.95
MH-RAAA-I4	1.2	950	4 pack "AA IMEDION NiMH" cells	\$9.95

NiMH Chargers for AA and AAA Batteries

Model	Description	HRO Price
MH-C9000	WizardOne Charger-Analyzer for 4 NiMH Batteries	\$59.95
MH-C801D	8 Cell 1-hour Charger for 8 NiMH Batteries	\$59.95

Solar Power

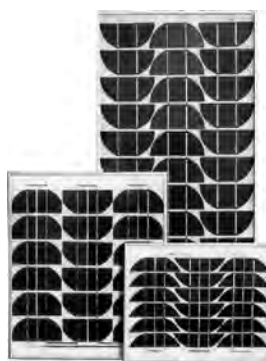


SunWize

OEM Solar Module Kits

The Solar Module Kits include a solar module, the SunWize SW-1L6 prewired voltage regulator with output cable and a fixed tilt, 45" side-of-pole mount. The waterproof controller has a multi-function LED indicator and fuse protection. 20 year warranty. OEM 5 and 10 kits include 5' cable and OEM 20 10' cable.

Kit Model	Rated Voltage	Rated Power	Open Circuit Voltage	Rated Current	Size (inches)	Weight (lbs)	HRO Price
OEM5	16.4	5 W	20.5	.31 A	11.82 x 9.84	7	CALL
OEM10	16.4	10 W	21	.61 A	15.15 x 14.76	8.5	CALL
OEM20	16.5	20 W	21	1.22 A	20.86 x 16.93	12.5	CALL



Steca

Solsum Controllers

The Steca Solsum F-line continues to be a huge success as one of the most used SHS controllers. With a power range of up to 10A at automatically recognized 12 V or 24 V, it fits system sizes of maximum 240W. The circuit board is completely electronically protected. With the LED user interface, it is easy to check the battery state of charge at any time. Large terminals guarantee a simple connection of solar panels, battery, and load. The Steca Solsum F works on PWM as a low loss series controller.



Solar Charge Controllers

Item	Model	Description	HRO Price
8725	Solsum 6.6F	12V/24V. 6 amps, with LED Display	\$39.95
8726	Solsum 8.8F	12V/24V. 8 amps, with LED Display	\$48.95
8727	Solsum 10.10F	12V/24V. 10 amps, with LED Display	\$62.95

Solar Batteries

Deka

The valve-regulated, gelled-electrolyte Deka Solar batteries offer reliable, maintenance free power for renewable energy applications. All models 12 VDC. Sealed construction eliminates periodic watering, corrosive acid fumes and spills. The electrolyte will not stratify so no equalization is required. These batteries are rated non-spillable by ICAO, IATA and DOT. Safe to ship by truck or air.



Deka Solar Batteries

Model	Capacity @ 100 Hr Rate	Capacity @ 20 Hr Rate	Size (inches)	Weight (lbs)	HRO Price
8G1	36 Ah	31 Ah	7.75 x 5.13 x 7.25	24	CALL
8G22NF	56.5 Ah	48 Ah	9.4 x 5.5 x 9.25	39	CALL
8G27	98 Ah	86 Ah	12.75 x 6.75 x 9.87	64	CALL

Battery Analyzer

WEST MOUNTAIN RADIO



Computerized Battery Analyzer CBA IV

The CBA is much more than a simple battery voltage tester or a battery load tester. Unlike a simple load tester the CBA will test virtually any type or size of battery, any chemistry, any number of cells up to 55 volts. For the first time and for a reasonable price, anyone can do scientific tests of their batteries by letting their computer do all the work. The CBA is capable of higher test rates than other testers: up to 40 amps or 150 Watts, whichever is higher. It not only tests the total amount of energy stored in a battery (capacity in amp-hrs), but it graphically displays and charts voltage versus amperage. #58250-1014

HRO Price \$149.95

POWER CABLE ACCESSORIES



Adapter Cables



CGPP-72

Cigarette Lighter Plug Fused (AGC) to Powerpole® (Length: 5 ft., Amps: 15 amps).

HRO Price \$14.95



TMCG-72

Cigarette Lighter Plug Fused (AGC) to OEM-T Male Connector (Length: 5 ft., Amps: 15 amps).

HRO Price \$14.95



PPTM-72

Powerpole® to OEM "T" Male Connector (Length: 5 ft.)

HRO Price \$14.95



SOC-PP

Cigarette Lighter Socket with internal ATC fuse and Powerpole® End (Length 1 ft., Amps: 15 amps).

HRO Price \$14.95



PSC-10-14 and PSC-10-38

6 foot 10 gauge Power Supply Cable with 45 amp Powerpoles® on one end and 1/4 or 3/8 inch gold plated

ring terminals on the other. **HRO Price \$13.95**



PSC-08

10 foot of 8 gauge Power Supply Cable with 75 amp Powerpole® connectors on one end and 1/4 inch gold plated ring terminals on the other.

HRO Price \$18.95

Red / Black Wire

Model	Description	HRO Price per Foot
RB-08	Red/Black 8 gauge wire	\$1.56
RB-10	Red/Black 10 gauge wire	\$1.25
RB-12	Red/Black 12 gauge wire	\$0.99
Model	Description	per Roll
RB-14-25	25 ft Roll 14 Gauge	\$19.95
RB-18-25	25 ft Roll 18 Gauge	\$10.95
RB-22-25	25 ft Roll 22 Gauge	\$6.95

In-Line WattMeter

WattMeter-PP

Measures up to 60 V and 130 A. Also: Watts, amp-hours, Watt-hours, peak amps, minimum volts, peak Watts. Backlit LCD display.



HRO Price \$59.95

Fused Adapter Cables

PPH-12

ATC Style 12 gauge fuse holders with 30 amp Powerpoles® mounted on each end. Includes (2) 15 amp ATC fuses.

HRO Price \$12.95

PPH-10

ATC Style 10 gauge fuse holders with 45 amp Powerpoles® mounted on each end. Includes (2) 40 amp ATC fuses.

HRO Price \$14.95

PPH-08

ATC Style 8 gauge MAXI fuse holder with 75 amp Powerpoles® mounted on each end. Includes (2) 80 amp MAXI fuses.

HRO Price \$24.95

RGH-12

ATC Style 12 gauge fuse holders with 30 amp Powerpoles® mounted on one end and gold plated 1/4" or 3/8" ring terminals on the other. Includes (2) 15 amp ATC fuses.

HRO Price \$12.95

RGH-10

ATC Style 10 gauge fuse holder with 45 amp Powerpoles® mounted on one end and gold plated 1/4" ring terminals on the other. Includes (2) 40 amp ATC fuses.

HRO Price \$14.95

RGH-08

ATC Style 8 gauge MAXI fuse holder with 75 amp Powerpoles® mounted on one end and gold plated 1/4" ring terminals on the other. Includes (2) 80 amp ATC fuses.

HRO Price \$24.95

Powerpole® Splitters

Red-Dee-2 Connect

PS-4

Red-Dee-2™ Connect Powerpole® splitter.

HRO Price \$17.95



PS-4 Plus

Red-Dee-2™ Connect Powerpole® splitter.

HRO Price \$17.95



PS-8

Red-Dee-2™ Connect Powerpole® splitter.

HRO Price \$27.95



PS-75 / 45-4

Red-Dee-2™ Connect Powerpole® splitter.

HRO Price \$38.95



PS-6AA

Red-Dee-2™ Powerpole® splitter with Powerpole® connectors on both ends.

HRO Price \$34.95



TRlcrimp Tool

Exclusively designed to provide a positive crimp on the Anderson Powerpole® 15, 30 & 45 amp contacts in one tool. Crimper for Anderson Power Products.

HRO Price \$39.95



Tri-Dies: Expand the functionality of your TRlcrimp tool with these additional die sets. Easily crimp OEM T, HF / VHF connectors, SB50 / PP75 contacts, hex crimp for various coaxial cable connectors, non-insulated terminals, insulated terminals, end sleeves.

HRO Price \$59.95

Powerpole® Bags

Model	Description	HRO Price Per Bag
PP- 15-10	Powerpole® 15A 10 pack	\$9.95
PP- 15-25	Powerpole® 15A 25 pack	\$19.95
PP- 30-10	Powerpole® 30A 10 pack	\$9.95
PP- 30-25	Powerpole® 30A 25 pack	\$19.95
PP- 45-10	Powerpole® 45A 10 pack	\$14.95
PP- 45-25	Powerpole® 45A 25 pack	\$29.95

AMPLIFIERS

IC-PW1



ICOM

**HRO
Discount Price
\$CALL**



w/ Solid State Remote Control Head

Icom's linear amp provides wide frequency coverage with up to 1kW output requiring only a 100-Watt maximum input. The duty cycle is 100 percent with full break-in operation. It covers amateur bands 160 to 15 meters plus 6 meters. Includes an automatic antenna tuner for all bands. Internal circuitry allows the ALC to be adjusted over a wide range so the PW1 can be used with almost any rig, not just Icom. Operates on 110 or 220 VAC 50 or 60 cycle.

Amplifier Specifications

	Model	Frequency Range	Modes	Power In	Power Out	Voltage	Current	Pre-amp	Connector	Wgt	HRO Discount Price
Ameritron	AL-1500	160-15 M*	SSB, CW	65 W	1500+ W	220 VAC	15 A	—	SO-239	50 lbs#	CALL
	AL-1200	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	—	SO-239	50 lbs#	CALL
	ALS-500M	160-15 M*	SSB, CW	100 W	500 W	13.8 VDC	80 A	—	SO-239	7 lbs	CALL
	AL-572	160-15 M*	SSB, CW	100 W	1300 W	110/220 VAC	12 A 110V	—	SO-239	40 lbs	CALL
	ALS-600	160-15 M*	SSB, CW	100 W	600 W	110/220 VAC	16 A 110V	—	SO-239	13 lbs#	CALL
	AL-80B	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	15/10 A	—	SO-239	54 lbs	CALL
	AL-800	160-15 M*	SSB, CW	100 W	750 W	110 VAC	12 A	—	SO-239	67 lbs	CALL
	AL-800H	160-15 M*	SSB, CW	55 W	1500 W	240 VAC	9 A	—	SO-239	69 lbs	CALL
	AL-811	160-15 M*	SSB, CW	75 W	600 W	110/220 VAC	8/4 A	—	SO-239	40 lbs	CALL
	AL-811H	160-15 M*	SSB, CW	75 W	800W	110/220 VAC	8/4 A	—	SO-239	41 lbs	CALL
	AL-82	160-15 M*	SSB, CW	100 W	1500 W	220 VAC	15 A	—	SO-239	52 lbs#	CALL
Icom	IC-PW1	160-15 M*	SSB, CW	100 W	1000 W	110/220 VAC	20/15 A	—	SO-240	55 lbs	CALL
Mirage ##	A-1015G	50-54 MHz	All	10 W	150 W	13.8 VDC	23 A	yes	SO-239	5 lbs	CALL
	B-34	144-148 MHz	FM	2 W	35 W	12-15 VDC	4 A	—	SO-239	2 lbs	CALL
	B-34G	144-148 MHz	FM	2W	35 W	12-15 VDC	4 A	yes	SO-239	2 lbs	CALL
	BD-35	143-149/430-450	FM	7 W	45 W	12-15 VDC	7 A	—	SO-239	3 lbs	CALL
	B-310G	144-148 MHz	All	4 W	100 W	13.8 VDC	15 A	yes	SO-239	3 lbs	CALL
	B-1018G	144-148 MHz	All	10 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	CALL
	B-2518G	144-148 MHz	All	25 W	160 W	13.8 VDC	25 A	10 dB	SO-239	5 lbs	CALL
	B-5018G	144-148 MHz	All	50 W	160 W	13.8 VDC	24 A	yes	SO-239	5 lbs	CALL
	C-22G	222-225 MHz	All	2 W	20 W	13.8 VDC	5 A	yes	SO-239	2 lbs	CALL
	C-211G	222-225 MHz	All	2 W	110 W	13.8 VDC	20 A	yes	SO-239	5 lbs	CALL
	C-1012G	222-225 MHz	All	10 W	120 W	13.8 VDC	5 A	yes	SO-239	5 lbs	CALL
	C-2512G	222-225 MHz	All	25 W	120 W	13.8 VDC	20 A	yes	SO-239	5 lbs	CALL
	D-1010N	430-450 MHz	All	10 W	100 W	13.8 VDC	20 A	—	N type	5 lbs	CALL
	D-3010N	430-450 MHz	All	30 W	100 W	13.8 VDC	20 A	—	N type	5 lbs	CALL
	D-100-ATVN	429 MHz ATV	All	1 W	52 W	13.8 VDC	20 A	—	N type	6 lbs	CALL
	D-1010-ATVN	430 MHz ATV	All	10 W	100 W	13.8 VDC	20 A	—	N type	6 lbs	CALL
Tokyo	HL-2.5KFX	160-10 M	SSB, CW	100 W	1500 W	200-240 VAC	30 A	—	SO-239	57.3 lbs	CALL
	HL-1.5KFX	160-10 M + 6 M	SSB, CW	85 W	1000 W	100/240 VAC	20/10 A	—	SO-239	45.5 lbs	CALL
	HL-450B	160-10 M	SSB, CW, FM	50	400	13.8 VDC	60 A max	—	SO-239	11 lbs	CALL
	HL-45B	160-10 M + 6 M	SSB, CW, FM	5	45	13.8 VDC	8.5 A	—	SO-239	12.5 lbs	CALL
	HL-550FX	160-10 M + 6 M	SSB, CW	65-90	550	110/220 VAC	30 A max	—	SO-239	22.5	CALL
Yaesu	Quadra System	160- 15 M* + 6 M	SSB, CW	100 W	1000 W	110/220 VAC	†	—	SO-239	21 lbs	CALL

*Owner modifiable for 10 m

#Add 35 pounds. Transformer shipped in separate package.

†VP-1000 power supply inc.

Expect long production delays

YAESU
The radio

Quadra System

\$CALL

— HRO Price



Here's the linear amp you need to operate on

HF (160–15 meters) and 6 meters. It has automatic band switching with the FT-1000D, FT-1000MP, FT-920, FT-990, and the FT-900 HF radios. The amp has 8 MRF150 power MOSFet transistors designed into 4 units of 2 transistors in a push-pull circuit at 48 VDC. The separate power supply, the VP-1000, allows easy installation. There are two input voltages, 117 VAC or 220 VAC. Output power is a function of the

power supply voltages. At 220 VAC there is 1000 Watts out on HF and 500 Watts on 6 meters. At 117 VAC the output is reduced to 500 Watts on HF. The Quadra is equipped with a built-in high speed tuner to match the amp to your antennas. It has four antenna outputs and two inputs. The multifunction omni-glow LCD display shows the status of the amplifier. There is automatic system monitoring with VSWR protection.



HL-2500FX

\$CALL – HRO Price

HF / 50 MHz 1.5 kW Automatic Linear Power Amplifier

Our engineers worked to make the HL-2500FX the lightest and most compact 1.5 kW amplifier in the industry, incorporating a switching power supply compatible with worldwide voltages. The amplifier is equipped with a newly developed band decoder. The amplifier's decoder changes bands automatically as the data signal is received from the associated HF transceiver's frequency bands. Typical output power is 1.5 kW PEP / SSB on HF (1 kW on 50 MHz) with the drive power of 85 - 90 W. The amplifier's main PA section includes 6 high power MOS FET THP2933's by Microsemi, resulting in 1.5 kW PEP (SSB max.). The amplifier's broadband characteristics require no further tuning once the operating band is selected. The amplifier allows operation in full break-in CW mode due to the use of the amplifier's high-speed antenna relays (made by Panasonic). The amp utilizes an advanced 16 bit MPU (microprocessor) to run the various high speed protection circuits such as overdrive, high antenna SWR, DC overvoltage, band mis-set etc. An analog multimeter allows the operator to monitor Pr (Reflected power), Vd (Drain voltage of power FET), Id (Drain current) and ALC voltage.



HL-45B

\$CALL – HRO Price

HF 45W Linear Power Amplifier

This amplifier covers 1.8 - 28 MHz plus 6 meters including the WARC bands. Modes include SSB, CW and FM. Output power is 45 W maximum with a drive of 5 W. The HL-45B has a built-in auto band-select function that interfaces with the Yaesu FT-817 QRP radio.

HRO will provide 10 meter modification information to amplifier customers upon receipt of a copy of your valid, current amateur radio license.

Light Weight



HL-550FX

\$CALL – HRO Price

Great for DX-peditions

The HL-550FX covers the 1.8-50 MHz amateur bands including the WARC bands. It supports SSB, CW with 550 Watts out and RTTY with 400 Watts out. Input is 65 to 90 Watts typical and 100 Watts maximum. The input and output are 50 ohms unbalanced and it operates in class AB parallel push pull. Connectors are SO-239. The amp has forced air cooling. It features a built-in 110/220 switching power supply. Weighing only 22.5 pounds and small in size, it is great for DX-peditions. Accessories included are AC power cord, coax jumper with PL259s, 2 RCA plugs, and spare fuses.



HL-1.5KFX

\$CALL – HRO Price

1.8 MHz - 29 MHz amateur bands including WARC bands plus 50 MHz, FCC certified, built-in power supply 110 or 220 VAC (240 V preferred). 10.7 x 5.6 x 14.4 inches, approx. 45 pounds. Fully solid state, auto-band switching with most Icom, Kenwood, Yaesu radios (cables included). Manual band switching as well. Two antenna ports selectable from front panel. Built-in RF power meter. HF 1 kW PEP SSB (typical). 6m 650 W PEP output. RF drive 85 W typical (100 W max). Great for DX-peditions or home station. External fan option for high duty cycle RTTY. Modes: SSB / CW / RTTY.

Options for HL- 1.5KFX

Call for Quotes

- HXT-1.5KF External fan kit for HL-1.5 KFX.
- YBC-1.5K / 950 Band Cable for HL-1.5 KFX to Yaesu FT-950.



HL-450B

\$CALL – HRO Price

HF 400W Linear Power Amplifier

The HL-450B has a built-in auto band-select function using a newly developed microprocessor based technology that works a smooth automatic operation when driven by the radio. Manual band settings are also possible. Operation is possible from remote locations with the optional HRC-60. Smooth send / receive switching is possible through the hard-key terminal. ALC output is also provided. A number of circuits protect the amplifier. The amplifier operates on SSB, CW and FM with 400 W maximum output. Typical is 350 W. 50 W drive is required. Frequency coverage is 3.5 - 28 MHz including the WARC bands.

Auto Tuner



HC-200AT

The HC-200AT works with a variety of antennas, tuning with lightning speed. The large analog meter automatically displays SWR status and forward power.

- Frequency Range: 1.8 – 54 MHz.
- Impedance Range: 5 – 500 Ω (3.5-54 MHz) / 15 – 500 Ω (1.8 MHz).
- Handling Power: 200 W max. PEP/CW.
- Input Impedance: 50 Ω (SO-239).
- Output Connectors: Two SO-239 and one wire antenna terminal.
- Tuning Time: 1.5 sec (typ), 4 sec max, 0.2 sec for memory tuning mode.
- DC Power: 12–14 VDC, 0.8A max, 0.1A after tuning is finished.
- Dimensions: 7.7 x 2.4 x 9.5 inches (WxHxD).
- Weight: approx. 2.3 pounds.
- Optional Parts: Radio Interface Cable (Icom) HTC-100AT / Icom5 (17ft).

HRO Price \$CALL

**Most Orders
Greater Than \$100
Ship Free UPS Brown**

Automatic Antenna Tuners

MFJ-929. 200 Watt Automatic HF Antenna Tuner. Compact size 6-1/2 W x 2-7/8 H x 8-3/8 D inches. Ultra-fast, 20,000 VirtualAntenna™ Memories, antenna switch, efficient L-network, matches 6-1600 Ohms, 1.8-30 MHz. Digital SWR / Wattmeter, radio interface.



MFJ-993B. 300 Watt Automatic HF Antenna Tuner. Like MFJ-929, but you can select 300 Watts (6-1600 Ohms matching range) or 150 Watts (6-3200 Ohms matching range). Also has 4:1 current balun, remote control port.



MFJ-994B. 600 Watt Intelli-Tuner™. Like MFJ-993B, but has 10,000 VirtualAntenna™ memories and handles 600 Watts CW / SSB, matches 12-800 Ohms. Does not have LCD display, antenna switch or 4:1 balun.



MFJ-998. 1500 Watts SSB / CW Intelli-Tuner™. Digital and analog SWR / Wattmeter, ultra-fast, automatic tuning, wide tuning range (12-1600 Ohms from 1.8 to 30 MHz), radio interfaces, built-in antenna switch for two coax / long wire, automatic bypass to protect your amplifier, field upgradeable software.

HF Roller Inductor Tuners



MFJ-989D. The world's most popular legal limit antenna tuner! Easily handles a full 1500 Watts SSB / CW, 1.8 to 30 MHz including MARS / WARC bands. 500 pF air variable capacitors, AirCore™ roller inductor with fast-tune crank knob, TrueActive™ peak-reading cross-needle SWR / Wattmeter, high voltage current balun, more! 12-7/8 W x 6 H x 11-5/8 D inches.

MFJ-986. Similar to MFJ-989D, but "D" has 2-knob tuning (differential capacitor and AirCore™ roller inductor) to make tuning fool-proof and easier than ever.



MFJ-962D. Handles 1.5 kW PEP SSB amplifier input power (800 W output).

Ideal for Ameritron's AL-811H! Peak-reading cross-needle SWR / Wattmeter, AirCore™ roller inductor.



MFJ-969. Covers 6 thru 160 meters! 300 Watts PEP SSB. TrueActive™ peak-reading SWR / Wattmeter, antenna switch, built-in dummy load, 4:1 balun, Lexan® front panel. 3-1/2 H x 10-1/2 W x 9-1/2 D inches.

Ameritron HF Amplifiers



AL-811H. 800 Watt PEP output. This low-cost desktop linear HF amplifier gives plenty of power to burst through QRM. This will plug right into a 120 VAC outlet. Four tough 811A transmitting tubes, heavy-duty power supply, all HF band coverage, operate / stand-by switch, transmit LED, plus more! UPS shippable. AL-811. Similar but has three 811A tubes, 600 Watts PEP output.

AL-80B. 1 kW PEP output from a compact, desktop linear that plugs into 120 VAC outlet. Classic 3-500G tube, inrush current protection, two year limited warranty.



ALS-600. No tuning, no fuss, no worries – just turn on and operate. 600 Watts PEP / 500 W CW, 1.5-22 MHz, instant bandswitching, SWR protected. 120 / 220 VAC. 9-1/2 W x 6 H x 12 D inches. Includes matching transformer power supply.

ALS-600S. ALS-600 with 10 lb. switching power supply.

HF Switched Inductor Tuners



MFJ-949E. More hams use MFJ-949s than any other antenna tuner in the

world! 300 Watts, 1.8 to 30 MHz, custom inductor switch, 1000 volt tuning caps, full size peak / average lighted cross-needle SWR / Wattmeter, 8 position antenna switch, dummy load, scratch proof Lexan® front panel. Size 3-1/2 H x 10-5/8 W x 7 D inches.

MFJ-948. Economy version of MFJ-949E, less dummy load, Lexan® front.

MFJ-941E. Super value tuner handles 300 Watts PEP, covers 1.8-30 MHz, lighted cross-needle SWR / Wattmeter, 8-position antenna switch, 4:1 balun, 1000 volt capacitors. 10-1/2" W x 2-1/2" H x 7" D.

MFJ-945E. HF and 6 meter mobile tuner. Extends mobile antenna bandwidth. Tiny 8 x 2 x 6" fits easily in car.



MFJ-971. Portable / QRP tuner tunes coax, balanced line, random wire 1.8-30 MHz. 30 / 300 or 6 Watt ranges. Matches MFJ QRP rigs. 6 x 6-1/2 x 2-1/2 inches.



MFJ-901B. Wide range 200 Watt PEP versa tuner. Covers 1.8 to 30 MHz.



MFJ-902. Tiny Travel Tuner, 4-1/2 x 2-1/4 x 3", full 150 W, 80-10 M, tuner bypass switch.

MFJ-904H. Similar but adds SWR / Wattmeter, 4:1 balun. 7-1/4 x 2-1/4 x 2-3/4 inches.

MFJ SWR Analyzers

MFJ-259B. SWR Analyzer™ with impedance meter reads antenna SWR, complex RF impedance, resistance (R) and reactance (X) or magnitude (Z) and phase (degrees), coax cable loss in dB, coax cable length and distance to fault, return loss, reflection coefficient, inductance and capacitance. Tells battery voltage, has huge LCD digital readout with built-in frequency counter, side-by-side SWR and RF impedance meters, Ni-Cd / Ni-MH internal battery charger, battery saver feature, low battery warning, and easy-access batteries. Has smooth, reduction drive tuning. Truly portable. Uses 10 alkaline, Ni-Cd or Ni-MH batteries (not included) or 110 VAC with optional MFJ-1312D.



MFJ-269. Covers 1.8 to 170 MHz and 415 to 470 MHz. Has all of the features of the MFJ-259B plus a 12-bit A/D converter (gives much better accuracy and resolution), CoaxCalculator™ (calculates coax line length in feet given coax length in electrical degrees and vice versa) and coaxial characteristic impedance input (zero to six hundred ohms).



HF Antenna Switches

MFJ-1702C. 2 position antenna coax switch. New center ground, lightning arrestor. 2.5 kW PEP, 1 kW CW. Loss below .2 dB. 50 dB isolation @ 450 MHz. 50 ohms. 3 x 2 x 3 inches.



MFJ-1704. Like MFJ-1702C. 4 positions. 6.25 x 4.25 x 1.25 inches. 50 ohm load. SWR 1.1: 1 to 30 MHz; 1.5:1, 30-650 MHz. SO-239. 2.25 x 2.25 x 7 inches.



MFJ-1701. 6 position antenna switch, 50-75 ohms. Handles 2 kW PEP or 1 kW CW. 1.8-30 MHz. SO-239 connectors. Unused positions automatically grounded.

MFJ-1700C. 6 position antenna and transceiver switch switches between 1-6 antennas and 1-6 rigs. Handles 2 kW PEP or 1 kW CW, 1.8 to 30 MHz.

Dummy Loads

MFJ-250. 1 kW Dummy Load, 50-Ohm. Oil filled, low SWR to 400 MHz. Rated 1 kW CW or 2 kW PEP for 10 minutes. One half rating for 20 minutes. 200 Watts CW or 400 Watts PEP continuous. Includes industrial transformer grade oil (no PCB).



MFJ-264. HF/VHF Dry Dummy Load covers up to 650 MHz, usable to 750 MHz. Rated 1.5 kW for ten seconds, 100 Watts continuous. Perforated metal cabinet. SO-239.



MFJ-260C. HF/VHF Dry Load is similar to MFJ-264, but handles 300 Watts for 30 seconds. Has derating curve. SO-239.



AT-5K Antenna Tuner

The AT5K takes power handling to the next level over the AT4K, coming in with a rating of 3500 Watts single tone continuous performance with low losses and wide Z range. Palstar's AT5K, like its AT4K little brother, has a T-matching network utilizing a 1:1 unbalanced-to-balanced transformer at the INPUT of the network.

- 3500 Watts single tone, high efficiency, low tuner losses and wide Z range.
- 160m to 15m with limited Z range on 10m.
- Balanced output with high power 5 kW Teflon® wire balun at the input of tuner circuit.
- Custom, large plate variable capacitors (600pF @ 6 kV).
- Ferrite 1:1 input balun.
- 10 Amp 7 kV CERAMIC 3.25" body roller inductor (35 μ H) wound with 10 ga. plated solid copper wire.
- Six-position switchable antenna input switch with 7 kV, 10 Amp contacts.
- Peak and peak hold dual cross-needle metering (1-2 sec hold) with backlighting.
- Fan cooling for extended 100% duty cycle operation.



AT4K Antenna Tuner

The AT4K has a power rating of 2500 Watts single tone continuous.

- Unbalanced/balanced output (switch activated on front panel) with high power balun at the input of tuner circuit.
- T match circuit: impedance matching range 8 ohms to 2000 ohms.
- Custom large value (460pf) variable capacitors at 6 kV.
- 10 amp edge-wound silver plated ceramic body roller inductors crank handle driven.
- Switchable antenna inputs.
- Ferrite 1:1 input balun.
- Peak / peak hold dual cross-needle metering (1-2 sec hold) with backlighting.
- Size: 15" x 7" x 16" deep.
- Weight: 20 lbs.



AT2KD Antenna Tuner

The AT1500DT and the AT1KP have been combined into a new 2kW tuner. The AT2K has all our features such as: peak and peak-hold; a resonant free roller system to operate from 6m to 160m continuously; new LED lit meter system; and a new compact size.

- Power rating 2000 Watts PEP.
- Frequency tuning range 160m to 6m.
- Impedance matching range 20 ohms to 1200 ohms.
- Easy and quick tuning with only two controls.
- Palstar designed ceramic body roller inductor.
- 6 position mode switch for multiple antennas.
- Meter power range 0-300 Watts / 0-3000 Watts.
- Active peak and peak hold dual cross-needle metering (1-2 sec hold) with LED backlighting.
- Differential capacitor tuning with 2 stators and 1 rotor (420 pF - 13pF - 420pF @ 5kV).
- High power ferrite 1:1 or 4:1 current balun (optional) externally installed.
- Size: 12 1/2" x 5 1/2" x 16".
- Weight: 12 lbs.
- **Optional 1:1 or 4:1 Current Balun available.**



AT-2K Antenna Tuner

The smaller roller inductor allows the AT2K to tune 6 meters, while a relay-switched toroid adds the extra inductance needed for 160 meter coverage. Newly designed capacitors feature lower minimum capacitance for improved high band performance, while maximum capacitance has been increased to 400 pF for better low band performance.

- Power rating 2000 Watts PEP.
- Impedance range 20 to 1500 ohm 160m to 10m (assuming resistive load).
- Ferrite 4:1 current balun.
- Low minimum custom variable capacitors (15pF to 400pF at 4.5 kV).
- 18 μ H 5 kV ceramic body roller inductor with turns counter.
- Silver plated inductor wheel shaft and contact wheel.
- 10 μ H relay-switched add-on inductor for 160 meters, roller inductor with turns counter.
- Active peak / peak hold cross-needle metering with backlighting.
- 6 position ceramic wafer antenna selector switch.

Palstar Antenna Products

Model	Description	Price
Antenna Tuners		
HF-AUTOTUNE	1500 W Antenna Tuner	\$1,445.95
AT5K	3500 W Antenna Tuner	\$1,145.95
AT4K	2500 W Antenna Tuner	\$865.95
BT1500A	1500 W Balanced Antenna Tuner	\$699.95
AT2K	2000 W Antenna Tuner	\$508.95
AT2KD	1999 W Differential Antenna Tuner	\$499.95
AT500	600 W Antenna Tuner	\$479.95
Wattmeters		
PM2000A	2000 W Wattmeter 1.8Mhz to 60Mhz	\$159.95
PM2000AM	200 W Wattmeter mobile 1.8Mhz to 60Mhz	\$159.95
Antenna Analyzer		
ZM30	Antenna Analyzer SWR 1Mhz - 30 Mhz	\$373.95
Shortwave Accessories		
R30A	Shortwave Receiver AM/SSB Collins Filters	\$849.95
SP30B	Speaker 12 Watts (for R30C/CC)	\$99.95
AA30	Shortwave Active Antenna Matcher .3 - 30Mhz	\$149.95
Dummy Loads		
DL1500	Dummy Load 1500 W - 450 Mhz	\$189.95
DL2K	Dummy Load 2000 W - 30 Mhz meter/fan	\$379.95
DL5K	Dummy Load 5000 W - 30 Mhz meter/dual fan	\$459.95
Baluns		
B4KC 4:1	Balun 4/1 4000W-Voltage-Hi-Z	\$89.95
B4KC 1:1	Balun 1/1 4000W-Current-Low-Z	\$89.95

ACCESSORIES



AT-500
Antenna Tuner

Covering 160 to 6 meters, the AT-500 features a differential tuning capacitor with 2 stators and 1 rotor, a precision ceramic body roller inductor, and a 4:1 ferrite current balun for balanced line feeds.

- Power rating: 600 Watts PEP SSB; 500 Watts CW.
- Output to both balanced and unbalanced lines.
- Impedance matching range 20 ohms to 1500 ohms.
- 6 position mode switch for multiple antennas.
- Active crossneedle peak / peak hold metering with backlighting.
- Meter power range 0-300 Watts / 0-1000 Watts.
- Differential capacitor tuning with 2 stators and 1 rotor (360pF - 14pF - 360pF @ 2.5kV).

B4000
Balun



Palstar's B4000 is a 4:1 voltage balun for use with Hi-Z antenna applications and center-fed wire antennas with open wire and twin lead transmission lines. It features a die-cast aluminum case for all weather indoor/outdoor usage. Inside the aluminum case are steatite insulators with a large 3.25" ferrite core with Teflon® sleeved 12 ga. wire and rated up to 4kW plus.

Shortwave Speaker
SP30B

- The compact SP30B short-wave speaker is tonally matched to the R30A and designed to put out clear, low-distortion reproduction of the frequency range of broadcast human speech. Peak power is 5 Watts.
- 60 Hz - 8 kHz.
 - 3.5 mm" plug with cable.
 - Size: 5.5" x 6.5" x 6.75" deep.
 - Weight: 4 lbs.



Antenna
Analyzer
ZM30

The ZM30 is an automated micro-controlled SWR antenna analyzer with an 8 bit micro-controller with a precision low power DDS signal generator. It includes a self-calibrating reflectometer. The digital display shows SWR at selectable frequencies from 1 to 30 Mhz. It measures: SWR, impedance, reactance, inductors and capacitors, transmission lines, stubs, Q, and resonant frequency. There is a serial port for field upgradable software. Battery operated.

PM2000A Wattmeter



The PM2000A measures and displays forward power (up to 2000 W), reflected power, and SWR simultaneously on its dual movement meter system in the frequency range of 1.8 MHz to 60 MHz. Accuracy of the readings is assured because the PM2000A features a true shielded directional coupler. The backlit meter can display either peak or average power readings with a Peak Hold function, and has 300 and 2000 Watt range settings.

The **PM2000AM** is a mobile version featuring a remote coupler that can be mounted up to 14' from the display head.

- PL259 coax connector.
- 115 VAC to 12 VDC adapter included.
- Size: 4.5" x 3.25" x 3.25" deep.
- Weight 1.2 lbs. / 0.55 Kg.

DL2K
Dummy
Load



- The fan-cooled DL2K is capable of handling 2000 Watts for 1.5 minutes - long enough to tune your amp.
- Frequency range DC to 30 MHz.
 - Internal Wattmeter and analog metering.
 - SO239 coax connector.
 - Size: 6" x 5" x 12.5" deep.
 - Weight 5 lbs.

TUNERS



HC-1500AT
HRO Price -- Call

Intelligent Auto Antenna Tuner

This compact HF / 50 MHz band high power auto antenna tuner has a maximum power handling capability of 1.5 kW. It performs best when combined with Tokyo Hy-Power linear amps. Otherwise, it still works independently with almost any linear and any radio due to built-in frequency counter with high speed and precision tuning due to the high resolution stepping motors driven by the microprocessor.

Typical tuning time is 1.5 sec (5.0 sec max.). Wide matching range of SWR 4.0 on 3.5 - 28 MHz (SWR 3.0 on 1.8, and 50 MHz). Auto tunes with SSB as well as keyed codes. Tuning position data is stored in the memory with respect to multiple frequency band segments and antenna ports. As a result re-tuning is extremely fast, when tuning up and down the bands. LED Bar-graph displays SWR status of tuner, and SWR of 1.0 to 3.0 is signed with 10 pcs of LED lamps. Backward compatible to the HL-2.5K FX and HL1.5K-FX amplifiers.



RT-100 Automatic
Antenna Tuner



A Technological Breakthrough
in Remote Tuning!

Place this coax-in / coax-out tuner near the feed-point of the antenna and it will virtually eliminate all feed line loss due to SWR. The RT-100 is DC powered over the coax, so no extra cables are needed. Add your own DC injection circuit or use the LDG RC-100 to power and control the tuner from your shack. **HRO Price \$199.95**



RC-100

The optional RC-100 will provide DC power over the coax as well as control for Auto mode, Lock, and Tune. **HRO Price \$49.95**



AT-200 Proll

The first auto tuner designed for high-powered transceivers

The AT-200 features LDG's "3-D Memory Array" allowing up to eight antenna settings to be stored for each frequency. Handles up to 250 Watts SSB or CW on 1.8 – 30 MHz, and 100 Watts on 54 MHz (including 6 Meters). Rugged and easy-to-read LED bar graphs show power and SWR. A function key on the front panel allows you to access data such as mode and status. An LED indicates bypass mode and another shows which antenna is selected. **HRO Price \$259.95**



Z-100 Plus

Definitive low cost auto tuner!

Designed to provide 125 Watt power handling in SSB, CW and digital modes, the Z100 Plus features 2000 memories that store both frequency and tuning parameters. Operating frequencies are stored with tuning parameters to make memory tunes in a fast 0.1 seconds. Full tunes take an average of only 6 seconds. The tuner will run on any voltage source from 7 – 18 volts. Six AA batteries (not supplied) will run it for a year of normal use. **HRO Price \$149.95**



Z-11 Proll

The Return of a Legend

Here is everything you need in a small, portable tuner designed for battery operation. Only 5" x 7.7" x 1.5" and weighing 1.5 pounds, it handles 0.1 to 125 Watts, making it ideal for both QRP and standard 100-Watt transceivers from 160 – 6 meters. With 8,000 memories in LDG's exclusive "3-D Memory" array, the Z-11 Proll uses a state-of-the-art processor-controlled switched-L tuning network. It matches dipoles, verticals, inverted-Vs or virtually any coax-fed antenna. With an optional LDG balun, it will also match longwires or antennas fed with ladder-line. **HRO Price \$169.95**

ANTENNA TUNERS

Rig Matching



AL-100

For Alinco Transceivers

The AL-100 allows you to interface to any Alinco HF radio including the new DX-SR8T, DX-77, and DX-70. A front panel LED indicates tuning status. The AL-100 has 2000 memories and is powered and controlled over the supplied interface cable. **HRO Price \$149.95**



IT-100

Especially for Icom Radios

The ideal tuner for IC-7000 and other Icom radios covers all frequencies from 1.8 – 54 MHz and will automatically match your antenna in a flash. Tunes 1 to 125 Watts SSB, CW and digital modes. Has a front panel push button for manual or automatic tune plus a status LED. Tune with the IT-100 or use your radio. Includes more than 2,000 memories. Uses latching relays. Tuning range is 4–800 ohms, powered by your radio. Includes Icom interface cable. **HRO Price 179.99**

YT-100

Auto Tuner for Yaesu Transceivers

The YT-100 includes a cable that connects with your FT-857, FT-897 or FT-100 (including all D models) to make it an integrated tuner powered by the interface. Press the tune button on the tuner, and everything else happens automatically: mode and power are set, a tune cycle runs, and the radio is returned to its original settings. Handles RF power from 1 to 100 Watts. CAT thru port for radio computer control. 2000 memories. 1.8 – 54 MHz coverage. **HRO Price \$199.95**



(radio not included)

AT-897 Plus

Auto Tuner for the Yaesu FT-897

The microprocessor controlled AT-897 Plus mounts on the side of your FT-897 just like the original equipment. A front panel button initiates the tuning sequence while lowering the RF power to 25 Watts and will bypass the tuner if pressed momentarily. The AT-897 takes power directly from the CAT port of the FT-897 and provides a second CAT port on the back of the tuner. Tunes any coax fed antenna. Use a balun for long wires. **HRO Price \$199.99**

KT-100



For Kenwood AT-300 Compatible Transceivers

The KT-100 allows uses the TUNE button on any AT-300 compatible Kenwood transceiver. Front panel LEDs indicate tuning status and show a match in seconds. The KT-100 has 2000 memories for band and frequencies. Using the supplied cable, plug the unit into your transceiver. **HRO Price \$199.99**



Z-817 Automatic Tuner for the Yaesu FT-817

The Z-817 automatic tuner, operating on 160 – 6 meters, attaches to the CAT port with the provided cable. Press the One-Touch-Tune button on the tuner and the Z-817 sets mode and power on the radio, tunes, then restores mode and power. Tuning time is 0.2 seconds for recalling one of its 2000 memories, and average time for a full is 2.5 seconds. The Z-817 also works with any QRP radio with output of up to 20 Watts. Press the tune button on the tuner while transmitting a carrier and it finds a match. Includes one foot CAT interface cable and coax jumper. Has CAT-thru port to allow computer control of radio. Tuning range of SWR loads from 6 to 450 ohms. It is powered by four AA batteries (not included). Size is 4.5 x 4.5 x 1.5". **HRO Price \$119.99**



Z-817H Automatic Tuner for the Yaesu FT-817



Using the Tokyo High Power HL-45B, the Z-817H is an autotuner for QRP radios including the Yaesu FT-817(ND). The Z-817H interfaces to the CAT port (ACC) on the back of the FT-817 radio with the provided cable. It switches to PKT mode, transmits a carrier, tunes the tuner, then restores the radio to the previous mode! It connects to the THP HL-45B for automatic band selection on the amp. **HRO Price \$159.99**

YT-450



Desktop Tuner for the Yaesu FT-450 series and FT-950

The YT-450 includes a CAT/power cable. Just press the tune button on the tuner and everything else happens automatically! The mode is set to carrier and the RF power is reduced, a tune cycle runs and the radio is returned to the original settings. **HRO Price \$249.95**

ANTENNA TUNERS

Tune Two Antennas



AT-1000 Proll
M 1000 meter
optional

The LDG AT-1000 Proll features an auto mode that automatically starts a tuning cycle any time the SWR exceeds a limit you set. There are provisions for two antennas and you can switch between them. 2000 memories store tuning parameters for each antenna. The unit will operate at any power level between 5 and 1000 Watts peak RF input. A large, easy to read LED bargraph has two selectable ranges. It will tune from 1.8 to 54 MHz matching a wide range of antennas. **HRO Price \$519.95**
M1000 meter Optional HRO Price \$129.99



AT-100 Proll

This automatic desktop tuner covers 1.8 – 54 MHz. A two-position antenna switch allows you to switch instantly between two antennas. The AT-100 Proll requires just 1 Watt for operation, but will handle up to 125 Watts, making it suitable for everything from QRP to a typical 100 Watt transceiver. It includes more than 2,000 memories for each antenna, automatically storing tuning configurations for each frequency and band as you use them. Includes antenna and bypass indicators on front panel. **HRO Price AT-100Proll \$209.99**



AT-600Proll
M 600 meter
optional

The AT-600Proll will handle up to 600 Watts SSB and CW, 300 on RTTY (1.8 – 30 MHz), 250 Watts on 54 MHz.

- LDG's processor-controlled switched-L tuner.
- Matches coax-fed antennas. Matches a 10:1 SWR down to 1.5:1.
- Use with longwires, random wires and antennas fed with ladder line by adding an optional balun.
- Two antenna ports.
- Requires 11-16VDC at 750mA.

HRO Price AT-600Proll \$349.95
M-600 Meter \$129.95



Smartuners™ are the most versatile and reliable antenna couplers available. Working with power levels from 1.5 to 500 Watts and with frequency ranges spanning the HF bands from a single antenna, they provide all-purpose tuning ideal for base, mobile, or portable operation. Just provide 12 V, connect to transceiver, antenna, and ground, and get on the air with minimum SWR. Visit sgcworld.com for a detailed review of the Smartuner family, and find the right one for your needs. Stop tuning, start talking.

The Original Smartuner™



SG-230
\$499.95

The SG-230 Smartuner was the first product in the HF market to offer fast, flexible tuning without any user interface. It is built in a rugged, factory sealed ABS enclosure. With this tuner and any single antenna, you will have continuous coverage from 1.8 to 30 MHz and it can be used with any transceiver you'll ever own. The SG-230 can be used in base station, mobile, marine and aviation applications, and has been the "Gold Standard" of automatic antenna tuning for more than a decade.



HF Antenna Coupler
SG-235
\$1099.95

This fully automatic coupler for 500 Watts will tune an antenna at least 23 feet long for the HF bands. The SG-235 automatically evaluates and switches 64 input and 32 output capacitor combinations plus 256 inductance combinations in a pi network design. The tuner remembers the chosen frequency and tuning values and automatically reselects those values when transmitting on that frequency.

The General Purpose Smartuner™

SG-237
\$299.95



The SG-237 is the most popular Smartuner. Its rugged construction and small size allow for maximum flexibility. It has a 100 W power rating and expanded coverage to 60 MHz, matching it perfectly with the most popular HF +6m transceivers. It will work with any balanced or unbalanced antenna including whips, backstays, dipoles, loops and long wires.

The Budget Smartuner™

SG-239 – \$185.95



Get quality performance from a low cost package. The SG-239 will operate from 1.8 to 30 MHz with 1.5 to 200 W. Like all Smartuners, it gives you the most flexibility because it will work with any antenna and any transceiver. It also has push buttons for a manual tune option. It weighs only 2 pounds, so you can use it for base or portable.

SGC Smartuners

Specifications	SG-230	SG-235	SG237	SG-239	MAC-200*
PEP Input (W)	3-200	3-500	3-100	1.5-200	1.5-200
CW Max Input (W)	80	200	40	80	80
Frequency (MHz)	1.8-30	1.8-30	1.8-60	1.8-30	1.8-60
Input Current (A)	0.9	1.4	0.3	0.23	0.23
Antenna Length (<3.3MHz)	8 ft	50 ft	8 ft	40 ft	40 ft
Antenna Length (>3.3MHz)	23 ft	300 ft	28 ft	100 ft	100 ft
Dimensions (in)	16x12x3	16x12x3	7x6x1.5	7.5x6x2	8.5x6.5x3
Weight (lbs)	8	8	2	2	5
Waterproof	yes	yes	yes	no	no
HRO Price	\$499.95	\$1,099.95	\$299.95	\$185.95	\$265.95

* Desktop Unit controls and switches up to 5 units.

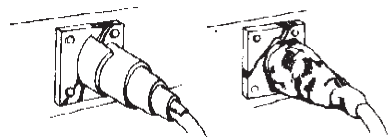
CABLE ASSEMBLIES / ROPE

Cable Assemblies

CABLE X-PERTS Ready-Made Coax Cable Assemblies

Model	Connector Both Ends	Burial	UV Resistant	Shields	Attenuation dB @ 100 Feet	Best Frequencies
CXP1318FC	PL259	Yes	Yes	2 (100% bonded foil + 95% TC Braid V/F 84%)	50 MHz 1.1 150MHz 1.9 450MHz 3.3	50-450 MHz
CXP008C	PL259	No	Yes	1 (95% BC Braid) V/F 78%	10 MHz 0.51 30MHz 0.9 50MHz 1.2	1-50 MHz
CXP1318FN	"N"	Yes	Yes	2 (100% bonded foil + 95% TC Braid V/F 84%)	150MHz 1.9 450MHz 3.3	150 MHz and Higher
CXP08XC	PL259	No	Yes	1 (95% BC Braid) V/F 78%	10 MHz 0.98 30MHz 2.0	1 - 30 MHz
CXP213C	PL259	Yes	Yes	1 (97% BC Braid) V/F 66%	10 MHz 0.62 30MHz 1.2	1 - 30 MHz (High Power)

Coax-Seal



Coax-Seal will seal all types of coax fittings, baluns, antenna parts and connectors of any shape. Adheres to most surfaces. Wrap Coax-Seal around the object you want to protect and then mold it into shape. Keeps moisture out of the coax fitting on antenna feed lines. Need to make a change? Just remove it and start over. **HRO Price: \$3.99 / roll**

CoaxWrap



CoaxWrap will provide your coax connections with outstanding protection from the weather. Just wrap the connection with the convenient roll. When you need access to the connection, the wrap removes easily. **Price per roll \$5.99.**



Connectors

Model	Description	HRO Price
BNC-44	BNC to UHF Adapter (BNC-255)	\$5.99
N-31	N to UHF Adapter (4400)	\$9.99
PL-259ST	PL-259	\$2.69
N-TGS	Type N Male	\$6.99
UHF-08	4 hole SO-239 Chassis Connector	\$4.99
UHF-10	Double Male UHF (83-877)	\$5.99
UHF-11	UHF Barrel (83-1J)	\$4.99
UG-363-4	Long UHF-UHF Barrel (83-1F)	\$10.99
UHF-15	RT. Angle Teflon, Gold Pin (83-1AP)	\$8.99
UHF-13	UHF "T" (83-1T)	\$5.99
UHF-19	BNC to UHF Adapter (31-28)	\$6.99
UHF-18	UHF to N Adapter (14000)	\$8.99

**Most Order Over
\$100 Ship Free
UPS Brown**

Part Number	Length (feet)	HRO Price
CXP213C100	100	\$124.95
CXP213C50	50	\$68.95
CXP213C6	6	\$23.95
CXP213C3	3	\$22.95
RG8/U Foam w/PL259		
CXP008C100	100	\$119.95
CXP008C50	50	\$62.95
CXP008C25	25	\$39.95
CXP008C12	12	\$32.95
CXP008C6	6	\$29.95
CXP008C3	3	\$26.95
RG8X-Mini w/PL259		
CXP08XC100	100	\$54.95
CXP08XC75	75	\$44.95
CXP08XC50	50	\$38.95
CXP08XC25	25	\$31.95
CXP08XC18	18	\$25.95
CXP08XC6	6	\$23.95
CXP08XC3	3	\$19.95
9913-type Flexible w/N-Connector		
CXP1318FN150	150	\$179.95
CXP1318FN100	100	\$139.95
CXP1318FN50	50	\$84.95
CXP1318FN25	25	\$51.95
CXP1318FN6	6	\$29.95
CXP1318FN3	3	\$28.95
9913-type Flexible w/UHF Connectors		
CXP1318FC100	100	\$129.95
CXP1318FC50	50	\$65.95
CXP1318FC6	6	\$23.95
CXP1318FC3	3	\$21.95
Tinned Copper Ground Braid		
235	1" wide	\$1.84/ft
2332	1/2" wide	\$0.79/ft
235RT-5	1" 5 ft long*	\$19.95
235RT-10	1" 10ft long*	\$25.95
2332RT-5	1/2" 5ft long	\$12.95
2332RT-10	1/2" 10ft long*	\$15.95

* w/Ring Terminals

Antenna Rope

Synthetic Textiles

Black Dacron® Polyester

This antenna rope is constructed of strong, double braid Dacron® polyester. It is black for UV protection and has excellent resistance to mildew and abrasion. The rope ties and cuts easily, sealing effectively with a hot knife. No expensive hardware is required. Sizes and prices shown in the chart.

Size	Model	Strength	HRO Price*
3/32"	ST-3/32-100	260+ lbs	\$9.95
3/16"	ST-3/16-100	770+ lbs	\$16.95
5/16"	ST-5/16-100	1790+ lbs	\$24.95

* Price per 100 feet

CONNECTORS / CABLE

Coax & Connectors



Andrew coax and all the matching connectors you will need are available as a special order drop shipment. Contact your nearest HRO store for complete details.

Model #	Cable Type	Diameter Inches	\$/100 feet*
LDF2-50	Foam Dielectric	3/8 inch	CALL
LDF4-50A	Foam Dielectric	1/2 inch	CALL
LDF5-50A	Foam Dielectric	7/8 inch	CALL
FSJ4-50B	Superflex	1/2 inch	CALL

*Plus Shipping

Patch Cables

Soldered with Teflon® PL-259 silver connectors.

Item	Description	HRO Price
HRO213/125U	125' 213 coax with PL259	\$139.95
HRO213/100U	100' 213 coax with PL259	\$129.95
HRO213/50U	50' 213 coax with PL259	\$71.95
HRO213/6U	6' 213 coax with PL259	\$25.95
HRO8X/100U	100' 8X coax with PL259	\$69.95
HRO8X/75U	75' 8X coax with PL259	\$59.95

Cable Ties

BongoTies™



Get It Together!

BongoTies are handy elastic ties for cables and other unruly items. Perfect for audio, music, computer, office and home, sports, workshop and your Ham Shack. They are reusable, easy to apply and remove. The ties are made of high quality natural rubber and wood. (Not for outdoor use.) **HRO Price \$5.49 for a bag of 10**

We have RF cable available from

DAVIS RF
JSC BELDEN
CABLE X-PERTS

Coax

Purchase coax in any length up to 500 feet.

RG8 / U

Standard RG8 /U, #13 stranded copper center conductor, cellular polyethylene insulation, 97% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 1.8 dB loss per 100' at 100 MHz. The most popular cable for HF/VHF/UHF. Use when long cable runs are not required.

RG213 / U

RG-213 / U coax, #13 stranded copper center conductor, solid polyethylene insulation, 97% bare copper shield, non-contaminating PVC jacket, 50 ohm impedance, 66% velocity factor and 2.2 dB loss per 100' at 100 MHz. This RG-8 type cable is best for HF. It may be buried.

9913F-7

9913F-7 is RG8/U-type coax, #9.5 stranded copper conductor, foam polyethylene insulation, 100% foil plus 88% braid shield, PVC jacket, 50 ohm impedance, 84% velocity factor and 1.4 dB loss per 100' at 100 MHz. The best cable for VHF and UHF applications.

RG8X

RG8X is small diameter coax, #16 stranded copper center conductor, cellular polyethylene insulation, 95% bare copper shield, PVC jacket, 50 ohm impedance, 78% velocity factor and 3.7 dB loss per 100' at 100 MHz. Good for short VHF runs and most HF uses.

Rotator Cable

8 wire, standard duty - 8 wire cable using six #22 and two #18 tinned copper conductors. PVC insulation.

8 wire, heavy duty - 8 wire cable using 6 - #18 and 2 - #16 tinned copper conductors. PVC insulation; chrome PVC jacket.

When Ordering Cable

Please order in multiples of 50 feet. Continuous length spools up to 500 feet are available. Call for quotes.

Call for Quotes on your Cable Needs

Cable

TIMES

Call for Low Discount Prices on Times Cable

LMR-200 – RG58 type

This is a standard RG58 'type' outdoor cable that is ideal for jumper assemblies, short antenna feeder runs, or any application requiring an easily routed, low loss RF cable. It has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 83%. It will withstand 1000VDC, a peak power of 2.5 kW, and shielding effectiveness is >90 dB.

LMR-240 – RG8X type

This RG8X 'type' outdoor cable has a solid BC inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 84%. It will withstand 1500 VDC, a peak power of 5.6 kW, and shielding effectiveness is >90 dB.

LMR-400 – RG8 / RG213 type

This is a standard RG8 / RG213 'type' outdoor cable that has a solid BCCA inner conductor, foam polyethylene dielectric, aluminum tape outer conductor, a tinned copper overall braid and black polyethylene jacket. The velocity factor is 85%. It will withstand 2500 VDC, a peak power of 16 kW, and shielding effectiveness is >90 dB.

LMR-400-UltraFlex

Similar specs as LMR-400 with TPE jacket.

ABR Industries

ABR Industries manufacturer coax with a non-contaminating, ultra-violet resistant, and direct burial jacket.

218XATC – RG8X w/PL259

100% bonded foil + 95% TC braid.

2213A – RG213U w/PL259

Solid polyethylene dielectric, 97% braid.

225400F – 400-UFw/PL259

Closed cell polyethylene dielectric, 97% braid, double shield. Low loss. N connector assemblies available.

SWR / WATT METERS

DIAMOND

SWR / Watt Meters



Diamond RF SWR / Watt meters cover the full range of amateur applications.

The SX-20C and SX-40C are the newest models. The SX-40C can be used on 220 MHz with a correction factor.

SX-40C



SX-1100

SX-240

All models:

- Illuminated meters.
- Require 12 volts DC.
- Low insertion loss generally less than 0.2 dB in HF range and 0.3 dB at higher frequencies.
- Power measurement accuracy generally $\pm 10\%$ on higher power ranges and $\pm 5\%$ on the lower.
- Low loss SO-239 connectors are used except for the high frequencies as noted in the table.
- Measurements are forward power, reflected power, SWR and, on selected frequencies, PEP monitor.

Diamond Meters

Model	Freq MHz	Power Ranges	Connector	HRO Price
SX-20C	3.5-30 50-54 130-150	30/300 W	SO-239	\$89.95
SX-40C	144-470	30/300 W	SO-239	\$79.95
SX-100	1.6-60	30/300/ 3KW	SO-239	\$124.95
SX-200	1.8-200	5/20/ 200 W	SO-239	\$89.95
SX-240	3.5-30 50-54 130-150 430-450	30/300/ 3KW	30/300/ 3KW	\$299.95
SX-400	130-150	5/20/ 200 W	SO-239	\$109.95
SX-600	1.8-160 140-525	5/20/ 200 W	SO-239	\$179.95
SX-1100	1.8-160 430-450 800-930 1230-1300	5/20/ 200 W	SO-239 Type N Type N Type N	\$199.95

LDG ELECTRONICS

FTL Meter for the Yaesu FT-897 / 857



The large, easy-to-read FTL-Meter is a plug-and-play solution to all your metering needs for the FT-857(D) and FT-897(D) transceivers. Attach to the meter jack at the front of the rig. LDG's new version presents a lush, highly readable 4.5 inch meter face with calibrated scales for signal strength and discriminator reading on receive, power output, SWR, modulation, ALC action and supply voltage on transmit. Functions are selectable from the radio's menu. "4.5" meters also available for IC-7600 and IC-7700. **HRO Price \$79.99**

FT Meter – Blue

for the Yaesu
FT-897 / 857

(radio not included)



LDG's Blue FT-Meter has a highly readable 2.5" meter face with calibrated

scales for signal strength and discriminator reading on receive, power output, SWR, modulation, ALC action and supply voltage on transmit. Each function is selectable from the radio's menu. Easily visible from anywhere on your desk or dash, the FT-Meter is illuminated by any external 12 VDC source. It comes fully assembled and ready to go; just plug it into the radio. **HRO Price \$49.95**

M-7600 Meter for the Icom IC-7600



The LDG M-7600 provides a 4 1/2" meter for the IC-7600. It will display S-meter on receive, or power out, SWR, ALC level or supply voltages, all selectable from the rig's setup menu. What's more, the M-7600 and the virtual meter on your radio can work together; for example, you can display SWR on the radio's meter and power output on the M-7600. A similar meter, the M-7700, is available for the IC-7700.

- Seven individual scales: S-Meter, Id, Po, SWR, Comp, Vd, ALC.
- Size: 4.0 x 4.0 x 5.7 inches.
- Cable length 3 feet.
- Sensitive 500 uA meter movement.
- Externally powered cool blue backlighting.
- Backlighting is 12 volts, 250 mA max.

M-7600 HRO Price \$79.99

M-7700 HRO Price \$59.99



DAIWA

CN-101

- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- Easy to read meter.
- PEP monitor function.
- Illuminated meter, 12 VDC plug provided.



	CN-101
Frequency	1.8 - 150 MHz
Power Range	15 / 150 / 1.5 kW
Power Rating	1.5 kW (1.8-60 MHz) 1 kW (144 MHz)
SWR Detection	4 W minimum
HRO Price	\$99.95



CN-801HP3 Professional Series

HRO Price \$199.95

- Easy to read, illuminated, extra large meter face with mirrored graph in .5 watt increments.
- Cross needle design reads forward, reverse and VSWR simultaneously, no calibration required.
- CN-801HP3 is the new 3000 Watt version.
- Illuminated meter, 12 VDC plug provided.

Daiwa 801 Meters

	CN-801 HP	CN-801 V	CN-801 S-II
Frequency	1.8-200 MHz	140-525 MHz	900-2500 MHz
Power Range FWD	20 / 200 / 2 kW	20 / 200 W	2 / 20 W
Impedance	50Ω	50Ω	50Ω
Connectors	SO-239	SO-239	N-Type
SWR Detection	5 W minimum	5 W minimum	0.5 W minimum
HRO Prices	\$159.95	\$149.95	\$279.95

ANALYZERS



Antenna Analyzers



CAA-500
1.8-500 MHz
Antenna
Analyzer

Commercial Grade SWR / Impedance Analyzer Range: 1.8 - 500 MHz (including 222 MHz band).

Check antenna installations in just seconds. Determine SWR and resonance of an antenna instantly.

Makes SWR adjustments quick and easy. Both SWR and impedance measurements are provided simultaneously. Precision analog meter provides SWR/impedance changes in real time. **HRO Price \$439.95**

SWR Meter



CMX-2300

Two cross-needle meters in a single case. Forward power, reflected power, and SWR are displayed simultaneously. Each meter has a -30db (nominal) attenuated BNC jack to monitor wave form and frequency. Both meters can operate at the same time. 12V DC jack to light the meters. SO-239 connectors. **HRO Price \$224.95**

Meter 1 1.8-200 MHz.
Max power: 3 kW (HF); 1 kW (VHF).
Power ranges: 30 / 300 / 3 kW.

Meter 2 140-525 MHz
Max power: 200 Watts.
Power ranges: 20 / 50 / 200 Watts.
Impedance: 50 Ohm
VSWR: 1.2:1 or less
Insertion loss: 0.2 dB or less.

**Call a Helpful Ham
at HRO**

COAX SWITCHES

Antenna Analyzers

RigExpert

NEW!

AA-30
HRO Price \$CALL



RigExpert produces antenna analyzers designed for testing, checking, tuning or repairing antennas and antenna feedlines in various frequency ranges. Mainly, these are SWR (Standing Wave Ratio) and impedance measurement instruments (vector impedance analyzers). Easy-to use measurement modes, as well as additional features such

as memory storage and connection to a personal computer on some, make RigExpert analyzers attractive for professionals and hobbyists. The graphical display of various parameters over a wide frequency range is a key feature of these analyzers, which significantly reduces the time required to adjust an antenna.



AA-54
HRO Price \$CALL

NEW!

Impedance Analyzer

Timewave Technology



AntennaSmith™
TZ-900

Analyze an antenna system in real time with customized graphs for individual installations. Uses a full color TFT LCD graphic display. Show SWR plot or Smith chart. With the push of a button the data can be stored for later on-screen comparison, download, analysis, and print-out. Upload your saved files to compare new and old antennas on the display in real time. (Uses the included Timewave AS-1 software on the PC. Requires Windows 98 or XP.)

Quickly tune the cursor to check your antenna system at the desired frequency while looking at the big picture on the graph. The direct digital synthesizer makes a great RF signal generator. Easily calibrate to WWV with 1 Hz frequency resolution. **HRO Price \$999.95**

Switches



**2 Position
Coax Switch**
CS-201



Daiwa has two heavy-duty coaxial switches. Both are usable to 500 MHz and the unused positions are grounded. Switches are available at slightly higher prices with type "N" connectors. **HRO Price \$32.95**



**Master
Antenna Controller**
MAC-200

Select the right antenna, for the right band, at the right time with the MAC-200. You can select among up to five antennas and tune automatically to minimum SWR. Monitor your power and SWR with meters on the front panel. The MAC-200 automatically selects the correct antenna for your operating frequency, quickly and accurately. It stores the correct settings in memory and will recall them in less than ten milliseconds. **HRO Price \$265.95**

**DIAMOND
ANTENNA**

**2-Position
Coax
Switch**



CX-210A

Diamond's heavy-duty wideband coax switch, the CX-210A, is a high quality 2 position coax switch with SO-239 connections. Like most Diamond products, this switch is very well built and durable. Two screws on the back allow you to mount the switch to a flat surface. **HRO Discount Price: \$49.95**

LIGHTNING PROTECTION

Lightning Protection

PolyPhaser

Coaxial Impulse Suppressors

Hermetically-sealed voltage sensitive gas tubes and other components assure that surge voltages and currents will not reach your equipment.



Flange Mounts

HRO Price \$61.95

Model	Frequency Range MHz	Maximum Power Watts
IS-50 UX-CO	1.5-400	HF - 2 kW
		VHF - 35 W
		UHF - 125 W
IS-50 UX-C1	50-700	VHF - 375 W
		UHF - 125 W
		UHF - 125 W
IS-50 NX-C2	125-1000	VHF - 375 W
		UHF low - 125 W
		800 MHz-1 GHz - 50 W



Bulkhead Mounts

HRO Price \$64.95

Type-N HRO Price \$69.95

Model	Frequency Range MHz	Maximum Power Watts
IS-B50 LU-CO	1.5-700	HF - 2 kW
		VHF - 375 W
		UHF - 125 W
IS-B50 HN-C2	125-1000	VHF - 375 W
		UHF low - 125 W
		800 MHz-1 GHz - 50 W

Rotator Control Protector

Model IS-RCT

Provides protection for rotator controllers, motors, control box and other nearby equipment. HRO Price Call

Power Line

Extension Protector

Two-outlet extension cords with master on/off switch and circuit breaker.

Model	Length	HRO Price
IS-PLDO-120-15A	15'	120 V @ 15 A Call
IS-PLDO-120-20A	6'	120 V @ 20 A Call

Grounding Panel

Model CU-SPGP

A .062" thick copper plate mounted on a painted 1/2" plywood backing. Mounting protectors and a single ground point established for station equipment. Comes with concrete anchors, all mounting screws, 10' of 1.5" copper grounding strap, 2 brass sandwich plates, and joint compound. 18" x 12". HRO Price \$CALL

ALPHA DELTA

Surge Protectors

Transi-Traps

The ATT3G50 coaxial surge protector was designed for the cellular, microwave point-to-point, and the broadband wireless industry. These products feature very low loss performance through 3 GHz. Typical loss is 0.1 dB at 1 GHz through 0.5 dB at 3 GHz. This series represents the lowest loss broadband design in the industry. Choose type "N" or "UHF" connector.



The Defense Logistic Agency (DLA) has assigned National Stock Number (NSN) 01 5470278 to the Model TT3G50 Coax Surge Protector and NSN 5325 01 5466841 to the 3G50 ARC-PLUG® Cartridge for use in all US Military and NATO applications, worldwide.

Model	Description	HRO Price
ATT3G 50N	200 W - 3.0 GHz, Type N	\$59.95
ATT3G 50NHP	2 kW - 3.0 GHz, Type N	\$59.95
ATT3G 50U	200 W - 500 MHz, UHF	\$49.95
ATT3G 50UHP	2 kW - 500 MHz, UHF	\$49.95

Lightning Protected Coax Switches



Delta-4B

4 Position Switch

This lightning protected 4 position RF coax switch uses the Alpha Delta ARC-PLUG® cartridge to protect your equipment from electrical surges. The exclusive center "off" (ground) position internally disconnects and grounds all antenna circuits. It has cast housing with constant impedance micro-strip cavity construction. Features a positive detent roller bearing switch drive. Handles full legal power. Delta-4/N for type "N" connectors. The Delta-4 handles frequencies through 500 MHz and the Delta-4/N through 1.3 GHz. HRO Price \$89.95; Type N \$99.95.

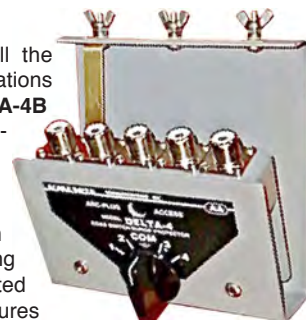


Delta-2B

2 Position Switch

This 2 position coax switch is precision lightning surge protected. Has the same constant impedance cavity construction with "center-off" ground as the Delta-4 and a built-in replaceable ARC-PLUG® cartridge. Order UHF or type "N" connectors for low-loss performance through 1.3 GHz. HRO Price \$59.95; Type N \$74.95.

Antenna Selector Console Desktop Coax Switch



This series retains all the features and specifications of the precision DELTA-4B series, including ARC-PLUG® module surge protection, in a desk top console that will sit right next to the equipment on your desk without having to be secured or bolted down. The console features a powder-coated steel housing and a solid brass ground buss, with #10 wire attachment hardware across the rear of the housing providing a common ground point for all station equipment and accessories.

Model ASC-4B Antenna Selector Console Switch (4 position, UHF Connectors thru 500 MHz). HRO Price \$149.95

Model ASC-4B / N Antenna Selector Console Switch (4 position, N Connectors thru 1.3 GHz). HRO Price \$159.95

Ground Clamp



Model UCGC

The UCGC clamp mounts directly on a standard 5/8" copper ground rod. You can attach up to 4 Model ATT 3G50 series coax surge protectors. The ground clamp is made from solid copper and has stainless steel mounting hardware with 6 bolts, washers, and nuts. It includes an adjustable copper ground wire clamp for your station single point ground wire of up to 4 gauge in size. HRO Price \$49.95



Multi-band HF Verticals

HF9V

More efficient than conventional trapped designs or "halfwave" verticals, the exclusive Butternut Differential Reactance Tuning system allows more of the antenna to be active on each band, for greater bandwidth, lower radiation angle, and superior performance!

- 9 bands, 80 thru 6 meters.
- No-radial operation with CPK counterpoise.
- Highly efficient 26 foot vertical radiator.

HRO Price \$499.95

HF2V →

Are you ready for the sunspot shortage when the action will be on 80 and 40? Be prepared with the HF2V. The entire antenna radiates on both bands for low radiation angle and maximum performance.

- Dual-band optimized for 80 and 40 meters.
- 32 feet tall; no guying required.
- 160 or 30 meters with optional adapters.

HRO Price \$299.95

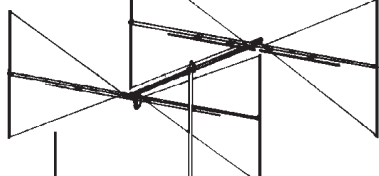
← HF6VX

Work the 6 most popular bands— 80, 40, 30, 20, 15 & 10 meters—with a single, highly efficient vertical radiator only 26 feet tall!

- No radial operation with CPK counterpoise.
- Add 160, 17 & 12, or 6 meters with optional adapters.

HRO Price \$439.95

"Butterfly" Beam

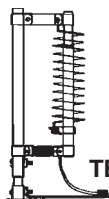


HF5B

Five popular bands in a single light-weight 2 element beam antenna. Ideal where space is limited, the HF5B provides up to 3 dBd on 20, up to 5 dBd on 15, 12, and 10. Light enough to turn with a TV rotator, the HF5B has a 6 foot boom and a wingspan of only 12.5 feet. Weighs only 20 pounds; surface area is 3 square feet.

HRO Price \$599.95

Vertical Antenna Accessories



TBR-160S

TBR-160S 160 Meter kit for HF9V, HF2V, or HF6VX. Not recommended for CPK.

HRO Price \$199.95

CPK Counterpoise kit for HF9V, HF6VX. Allows operation with no radial system.

HRO Price \$205.95

STR-II Resonant radial kit for above ground mounting of Butternut verticals.

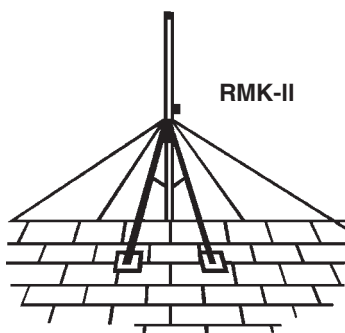
HRO Price \$169.95

A-1712 Adapter for 17 and 12 meters for 6 band Butternut verticals.

HRO Price \$69.95

RMK-II-Roof mounting kit. Includes STR-II. **HRO Price \$204.95**

GRK Ground Radial Kit. **HRO Price \$99.95**



RMK-II

HF BASE ANTENNAS



Skyhawk 3X10

The Next Generation HF Yagi

HRO Price \$1199.95

The Bencher Skyhawk antenna is a major step forward for serious HF operators. It is not just another trapped tribander. The Skyhawk features 10 elements on a 23 foot boom, with three full-sized yagis sharing a common feedline and a common boom. There are three elements on 20 meters, three on 15 meters and four on 10 m. All elements are full-sized with no lossy traps and driven directly.

Special features of the Skyhawk include wide bandwidth, excellent F/B ratios, superb gain, and low weight. With boom and element wind compensators, there is zero rotational mast torque and 90 mph wind survival. All materials are corrosion and UV resistant. Stainless steel blind rivets are used for element assembly.



SKYHAWK

Custom aluminum extrusions make assembly a snap and assure longevity. A new design of boom to mast bracket makes installation the easiest ever. Heavy wall boom construction means that no boom truss cable is required, making it easier to stack antennas for other bands. A Bencher P5 balun is included.

Band Specifications

Band	Effective Boom Length	VSWR	F/B	Gain
20	23	<1.4:1	>20 dB	>7 dBi
15	15'6"	<1.3:1	>16 dB	>7 dBi
10	16'9"	<1.6:1	>14 dB	>7.7 dBi

The wind load is 8.5 sq. ft, turning radius 22 feet, wind survival is 90 mph with no ice, 2" boom, 50 ohm impedance and a maximum power rating of 5KW.

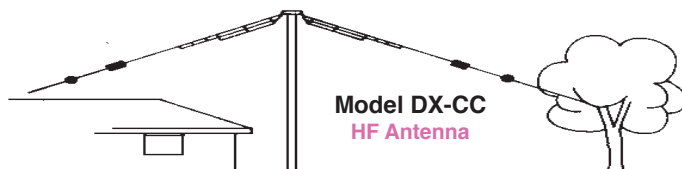
Limited Space Antennas

ALPHA DELTA

All of Alpha Delta's limited space antennas use stainless steel hardware where required, are fully assembled, and are manufactured to withstand severe weather. SO-239 connectors.

Model DX-B is a single wire, high performance quarter-wave sloper antenna for 160, 80, 40 & 30 meters. For limited space, the antenna requires only 60 feet for installation. Use with a wide range antenna tuner. Pre-assembled and pre-tuned. Has stainless steel hardware, 12 gauge insulated solid copper wire and the Alpha Delta "ISO-RES" RF choke coils, 50 ohm coax feed. Full legal power. **HRO Price \$109.95**

Model DX-A: A quarter wave twin sloper for 160-80-40 meters. One leg is 67' and the other 55'. Installs as an inverted-V. **HRO Price \$99.95**



**Model DX-CC
HF Antenna**

Model DX-CC: A no trap 80-40-20-15-10 meter dipole. 82' long. **HRO Price \$159.95**

Model DX-DD: A no trap 80-40 meter dipole. 82' long. **HRO Price \$129.95**

Model DX-EE: A no trap 40-20-15-10 meter dipole. Only 40' long. **HRO Price \$139.95**

HF / VHF / UHF BASE ANTENNAS

HF Base Antennas



Classic Tribanders C Series

Force 12 has a lineup of antennas covering the 20-15-10 m bands with a single feedline. C-Series antennas are multiple monoband Yagi antennas stacked horizontally on a single boom using FORCE 12's patented open sleeve system. All are trapless and are acclaimed as outperforming trapped antennas.

C3 20-15-10 m

7 elements on an 18' boom.
HRO Price \$1199.00

C-3S 20-15-10 m

6 elements on an 12' boom.
HRO Price \$1069.00

C19XR 20-15-10 m

8 elements on a 19' boom. 3 elements for 20 m, 5 for 15 m, 5 for 10 m.
HRO Price \$1999.95

Delta 4-Beam C3 + 40 m

8 elements on an 18' boom. There is a separate feedline for 40 m.
HRO Price \$1699.00

Delta 6BA 6 bands 10-40 m

6 elements on a 24' boom.
HRO Price \$2599.00

Ultra-Compact Vertical



HVU-8

8 Bands on HF / 2m / 70 cm

HRO Price \$339.95

At only half the height and weight of traditional HF vertical antennas, model HVU-8 includes 2m and 70cm. It is easily configured and installed in confined or restricted spaces such as apartment balconies, or for temporary use. Each HF band and 6m has an independently tuned radiator and radial system while the main antenna mast is tuned for constant operation on 2m / 70 cm.

- HF and 6m: 1/4 wave.
- 2m: 1/2 wave 2.15 dBi gain.
- 70cm: two 5/8 waves in phase, 5.5 dBi gain.
- Impedance: 50 Ohm.
- Max power HF: 200 W SSB; 6m-70 cm: 150 W FM.
- Height: 8 ft 6 inches.
- Weight: 5 lbs 7 ozs.



Titan DX

The Titan is a center fed GAP vertical, that provides a host of benefits in a rugged, yet manageable form. The Titan offers broad, continuous frequency coverage in a no tune, easy to assemble format. Designed to work in a limited space or as the perfect compliment to an antenna farm. NO RADIALS required.

Total continuous coverage under 2:1 on 10m, 12m, 15m, 17m, 20m, 30m, 40m, and 100 kHz on 80m.

Challenger

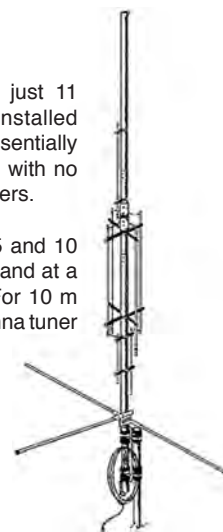
The Challenger is capable of operating on eight separate bands from 3.5 MHz to 144 MHz. Use it on 80, 40, 20, 15, 12, 10, 6 and 2 meter bands with over 130 kHz bandwidth on 80 m.

The antenna is designed to be mounted directly in the ground or elevated. A ground mount is provided. The Challenger may be roof mounted. The antenna requires a counter poise of three 25 foot insulated wires.

Eagle DX

The Eagle DX weighs just 11 pounds and can be installed almost anywhere. It is essentially a set of vertical dipoles with no traps, coils or transformers.

It covers 40, 20, 17, 15 and 10 meters with the entire band at a VSWR of 2:1 or less. For 10 m this is 500 kHz. No antenna tuner is required.



Voyager DX

The Voyager DX is manufactured specifically to provide efficient low band operation from the typical backyard without a huge investment in time, money, or space.

It is not another "add a kit" antenna for 160m. GAP technology opens up the low bands. Emphasis was given to 160 m and 80 m when designing the Voyager.

The antenna employs a capacity hat with circular ring to reduce the physical height to 45 feet while maintaining an electrical height of 66 feet. Parallel tuner rods are used in its design. No tuning or matching are required to put the Voyager on the air.



GAP Antennas

Model	Bands	Bandwidth (under 2:1)	Height (ft)	Weight (lbs)	Mount	Counter poise	Ground Area Required	HRO Price*
Challenger	80,40,20,15,12,10,6,2m	Entire band except 130kHz 80m	31.5	18	Ground or elevated. Ground Mt supplied	3 at 25'	10' x 12'	CALL
Voyager DX	160,80,40,20m	Entire band except 900kHz 160m	45	30	Ground. Aluminum pivot and guy brackets supplied	3 at 57'	4 guy points 25 ft from base	CALL
Eagle DX	40,20,17,15,12,10m	Entire band except 500 kHz 10m	21	11	Most anywhere. Pole mount supplied for 1.25 ant Mast	3 rigid at 80" long		CALL
Titan DX	80,40,30,20,17,15,12,10m	Entire band except 100 kHz 80m	25	25	Most anywhere. Pole mount supplied for 1.25 ant Mast	4 rigid at 80" long		CALL

* All GAP antennas shipped PLUS freight

VERTICAL ANTENNAS

HF / VHF / UHF



S9v31 Vertical 40 Meters - 6 Meters

The S9v 31 is a vertical designed for 40 through 6 meters. Mount on the ground or on your roof. The coax feed line can be directly connected to the antenna. Radials and a 1:1 current choke balun are recommended.

Internal rig tuners will easily tune the S9v31 anywhere on 40 meters. To use as a multi-band antenna, a quality antenna tuner is needed. For multi-band use, a 4:1 balun is recommended at the antenna feedpoint for coax runs more than 50 feet long. **HRO Price: \$99.99**

S9RP Aluminum Radial Plate

with Stainless Steel
Hardware

Includes 20 stainless steel 1/4-20 x 3/4 hex bolts, nuts, washers and lock washers to secure your ground radials to the plate. **HRO Price: \$39.99**



S9v43 Vertical 80 Meters - 6 Meters

This heavy-duty, telescoping, self-supporting fiberglass vertical is designed for use from 80 through 6 meters. Weighs under 9 pounds and is just over 42' tall. Must be ground-mounted and requires a manual or automatic antenna tuner. **HRO Price: \$199.99**

S9v18 Vertical 20 Meters - 6 Meters

Designed for 20 through 6 meters. Mount on the ground or on your roof. Using the antenna tuner inside your rig (or with an external antenna tuner) a 1:1 choke balun is recommended. To use as a multi-band vertical, you will need an external antenna tuner in your shack and a 4:1 unun at the antenna feed point. **HRO Price: \$49.99**

Line Thrower



EZ HANG

EZ HANG 2 can be used to "throw" a line up to 100 feet over a tree or other object. Cable pullers can use EZ HANG to "throw" a line through a dropped-ceiling/plenum and avoid using long pull-rods. It cuts installation time and your cost dramatically.

EZ HANG's basic construction is steel attached to a reel that is corrosive resistant plastic and stainless steel. The reel comes with 300 feet of 10-pound-test monofilament line installed, a quick-disconnect clip to release

the weight and an easy-to-see "bright yellow" one-ounce lead weight.

EZ HANG 2 Package

includes spare bands,
2 weights and clips,
and the EZ HANG
HRO Price \$79.95

Visit HRO's secure website
<http://www.hamradio.com>

Radiowavz



G5RV

NEW!

Patriot Adjustable Loading Coil System

The Patriot adjustable loading coil system is the perfect alternative approach for people who live in small spaces. This product is not just a simple coil, but a part of a vertical antenna system that can be configured to meet many diverse needs. The system can be configured as a vertical antenna, a ground mounted vertical, or with two units, as a dipole.

It is a great match for rooftops, balconies, on vehicles, boats, expeditions, and for the beach or lake side.

The Patriot systems can handle 500 Watts SSB and 200 Watts CW.

Product	Model	HRO Price
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G5RV Line

(w / heavy duty ladder line)

G5RV Jr.	\$32.95
G5RV Lite-E	69.95
G5RV-E	64.95
G5RV MAX-E	94.95

Dipoles with 1:1 Balun

160 m	160DP11	79.95
80 m	80DP11	69.95
40 m	40DP11	47.95
20 m	20DP1	39.95
10 m	10DP11	39.95

Double Bazooka

160 m	160DBZ	129.95
80 m	80DBZ	95.95
75 m	75DBZ	75.95
60 m	60DBZ	70.95
40 m	40DBZ	59.95
20 m	20DBZ	39.95
17 m	17DBZ	37.95
15 m	15DBZ	37.95
12 m	12DBZ	39.95
11 m	11DBZ	39.95
10 m	10DBZ	37.95
6 m	6 DBZ	35.95
2 m	2DBZ	35.95
70 cm	440DBZ	35.95

DX Loop

160 m	160LP	250.95
80 m	80LP	139.95
40 m	40LP	79.95
20 m	20LP	59.95
6 m	6LP	45.95
2 m	2LP	45.95

DX (OCF) Windom

DX 40	DX40	59.95
DX 80	DX80	79.95
DX 160	DX160	135.95



Product	Model	HRO Price
40 m	P40	\$54.95
80 m	P80	69.95
160 m	P160	149.95
40 m Stainless	P40S	\$69.95
80 m Stainless	P80S	104.95
160 m Stainless	P160S	169.95

Baluns



Baluns

1:1 Air	B11a	24.95
1:1 Ferrite	B11f	34.95
1:1 Isolation	B11i	34.95
1:4 Voltage Air	B14va	25.95
1:4 Voltage Ferrite	B14vf	29.95
1:4 Current Air	B14ca	32.95
1:4 Current Ferrite	B14cf	44.95
1:6 Current Isolation	B16ci	39.95
1:9 Balun Isolation TX	B19tx	39.95

BASE ANTENNAS

MOBILE ANTENNAS

6m / 2m / UHF Beams

M²

Ham Starter Antennas

**50 MHz, 144 MHz,
220 MHz,
or 440 MHz Beams**

These low cost antennas have a single heavy duty mounting cradle and stainless steel hardware – the quality construction you have come to expect from M². Built with size and portability in mind, these antennas are great for field days, mountain topping, fox hunts, DXpeditions and ATV use. The antennas break down to no more than 40" long, making them a natural for travel.

Model	Elements	Band	HRO Price
6M3-SS	3	50 MHz	\$164.95
2M3-SS	3	144 MHz	\$88.95
222-5SS	5	220 MHz	\$89.95
440-6SS	6	440 MHz	\$74.95

Log Periodic



**ELK
2 m
440 MHz
Dual Band**



The Elk 2 m / 440 is a dual band log periodic antenna for 144-148 MHz and 430-450 MHz. The antenna features 6.6 dBd gain on 144 MHz and 7 dBd on 440 MHz. The SWR is 1:1 in these frequency ranges. The antenna handles 200 Watts on 144 MHz and 100 Watts on 440 MHz. The boom length is 24 inches and the antenna weighs only 1.4 pounds.

The Elk 2 m / 440 assembles quickly with color coded threaded elements that screw into the color coded boom. Access two bands with just one coax fitting. No duplexer is required. All of the band may be used without retuning. Easily change the polarity of the antenna by twisting the mounting assembly. **HRO Price \$CALL**

HF Base Antennas



Cobra UltraLites

UltraLite Senior 160-10 Meters, 140 feet
HRO Price \$125.95

UltraLite Junior 80-10 Meters, 73 feet
HRO Price \$115.95

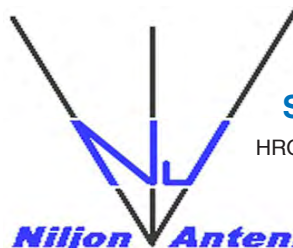
UltraLite Kid 40-6 Meters, 41 feet
HRO Price \$99.95

On its primary and harmonic operating frequencies, the Cobra antenna works identically to a ladder-line fed doublet, but its unique close-spaced multi-wire element also introduces two additional resonant responses below the antenna's fundamental operating frequency. These responses extend frequency coverage far beyond that of a conventional doublet or G5RV. For example, the 140-foot (80 meter) Cobra also resonates near 2.8 MHz and on 160 meters. Similarly, the 73-foot (40 meter) Cobra also covers 60 and 75 Meters.

UltraLite Cobras are designed and engineered to survive harsh winter climates. Weighing only four pounds including the feedline, they install quickly and pull up higher with far less stress on tree branches and support lines. The black marine-grade ABS insulators won't deteriorate in sun or fracture in cold. All hardware is stainless. All wire is UV stable and pull-tested for strength. UltraLites come pre-assembled and ready to install with 100-feet of rugged copper-weld ladder line attached.

All Cobras require a tuner. In most installations, the auto-tuner built into your transceiver should provide sufficient tuning range. Because the Cobra presents a balanced load, we recommend installing a 4:1 current-style balun at the station end of the feedline (many external tuners provide a built-in balun).

VHF / UHF Mobile



Super-M

HRO Price: \$79.95

Niljon Antennas

**144 MHz / 220 MHz / 440 MHz
with Wide Receive**

The typical 1/4 wave antenna used on commercial (taxis, trucking companies, etc.) and government vehicles (ambulances, other city vehicles, school buses, state patrol, etc.) can easily be replaced by the Super-M with tremendous, even life-saving, results. One antenna receives 25 to 1300 MHz and transceives on 140-170 MHz, 200-225 MHz and 400-480 MHz. It handles 200 Watts with a direct feed and is only 19" high.

SUPER-M V/U-NMO comes packaged with an adapter to screw onto a Motorola NMO style mount.

HF Whip Antenna



SG-303

Up to 500 Watts

HRO Price \$CALL

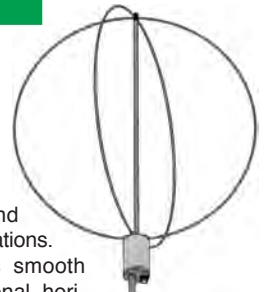
SGC's 9-foot helically wound whip antenna comes in two sections and provides full HF coverage when used with a Smarttuner or other antenna coupler. Covers 1.8-30 MHz, up to 500 W. Available with SGC's mobile swivel ratchet mount, Cat. # 55-75.

2 Meter Antennas

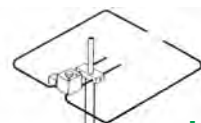
M²

**2m
Eggbeater**

EB-144 / RK2M



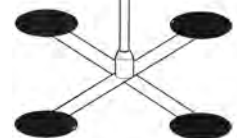
Use the Eggbeater for fixed and mobile operations. It produces smooth omnidirectional horizontal polarity at the horizon. Above the horizon, the pattern transforms to right hand circular off the top making it a natural for OSCAR use. No rotation or steering is required. **HRO Price \$Call**



**2m
HO Loop**

Shown with optional mag mount

HRO Price \$CALL
Colored versions higher



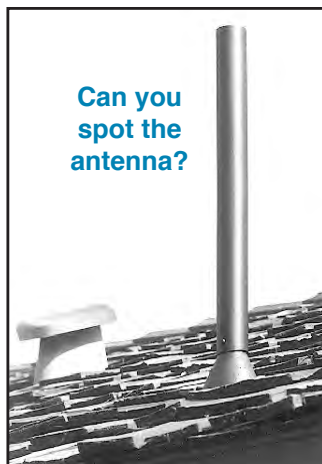
Nothing satisfies more than our 2 m "HO" Loop for horizontal performance. This easily adjustable antenna has plenty of bandwidth. It will handle a KW plus. Stack antennas for more gain.

The Loop has durable construction for "tree bashers." Have no weather worries with the bright aluminum standard finish or an anodized finish in gold, black, turquoise or green.

PORTABLE ANTENNAS

ANTENNA MOUNTS

Ventenna™ Company



Can you
spot the
antenna?

Neither can your neighbors.

At last a solution to antenna restrictions! The Ventenna™ quickly slips over an existing vent pipe and your signal really gets out! This nearly invisible antenna is one of the most ruggedly made. The VT-27 dual-band is for 2 m / 70 cm. Single band models are for 144 MHz, 220 MHz or 440 MHz.

Model	Bands	HRO Price
VT-14	144 MHz	\$59.95
VT-22	220 MHz	\$59.95
VT-27	144 MHz + 440 MHz	\$99.95

Portable HF Vertical Antenna HFp — \$219.95

HRO Price

The HFp portable HF vertical antenna covers 6.5 MHz to 30 MHz. (An 80 m option is available.) It handles 200 Watts and is 10.5 feet when fully assembled. The package weighs 2.2 pounds.

Typical bandwidth without adjustment is 200 kHz on 40 m, 400 kHz on 20 m, greater than 1 MHz on 10 m, and the full band on 30 m, 17 m, 15 m and 12 m.

The antenna includes elements for all bands, mounting base, ground radials on easy-to-use spools, and guy cable on an easy-to-use spool.

The Owl

Want to keep those birds off your antenna system?

The OWL is just the trick. Mount this fella on top of your tower and the birds will stay away.

HRO Price \$19.95



YAESU The radio

HF / VHF / UHF Mobile Antenna ATAS-120A

The ATAS-120A provides HF / VHF / UHF coverage with automatic motorized tuning. Control radiator length from the transceiver for best SWR. Compatible with Yaesu's FT-100, FT-847, FT-857, and FT-897. **HRO Price CALL**

HF Dipole Antenna YA-30

This 83-foot broadband dipole provides optimum performance over 1.8-30 MHz. Usual requirements for an antenna tuner between the rig and antenna are eliminated by the unique broadband design. Handles 150 Watts at an SWR of less than 1.9:1 on the amateur bands. Preassembled and pretuned. Can be installed as a horizontal flat-top, inverted-V, or sloper. 100 feet of RG-8X with PL-259 included. **HRO Price CALL**

HF / VHF / UHF Portable Field Antenna ATAS-25

The ATAS-25 has radiating elements covering amateur bands 10-40 m, 6 m, 2 m, and 70 cm. Mounts to a standard camera tripod (not included). Uses a manual tuning system. Dual frequency operation possible with a duplexer (not included). Antenna collapses to less than two feet to carry; expands to 7.2 foot maximum height. This is an ideal system to use with the FT-817, FT-897, and FT-857 transceivers. Weight is 2.05 pounds. **HRO Price CALL**

Wireless Antennas



Wi-Fi / 802.11b Wireless LAN Antennas

NGC offers a wide selection of directional and omnidirectional antennas for Amateur Television, the ISM band, LAN / WAN, data links and wireless internet.

GP-24R

ATV/ISM band: 2400-2500 MHz.
Omnidirectional gain: 15.4 dBi.
Height: 5' 10".
Connector: N-Type.
HRO Price: \$159.95

GP-24-3

Same as GP-24 but omnidirectional with 3 degree electrical downtilt.
HRO Price: \$159.95



GlenMartin Towers



Four-leg roof-top towers provide the perfect low-cost tower option for almost any application. Great for start-up stations, or alleviating crowded ground-based towers. Whatever the

case, GlenMartin Roof-Top mounts are the Solution! Besides unprecedented strength, our roof mounts are maintenance free. No guying required, and all parts are labeled for easy installation. The anodized satin-finish construction will add to the beauty of your roof line for years to come. All roof-tops are UPS shippable. **HRO Price: \$CALL**

ALPHA DELTA



Outpost™

Tripod / Ground Coupler Ground Mount System

HRO Price \$275.95

- Matches the base impedance of most mobile HF antennas.
- Fold-over 3/8 x 24 SO-239 top mount.
- Constructed of aircraft 6061-T6 aluminum, stainless steel hardware and wing nuts.
- No digging—no holes in ground—no concrete.
- Fold-out legs act as a large capacitor providing proper coupling to the ground and proper base impedance to the antenna. Fold-up design for 10-minute installation.

MicroMount

HRO Price \$44.95

For use with small lightweight HF portable antennas. Micro-Mount has a fixed height of 8" with a 12" diameter footprint on 3 legs. It folds to an 8" length. Has a fully articulated pan head mount. Includes a 12" velcro strap to mount to most anything. Includes a 3 counterpoise system and weighs less than 10 ounces.

Cushcraft HF Antennas

Model	Bands	Ele	Fwd Gain dBi	Max F/B dB	Min SWR	Boom Length		Boom Diameter		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight	
						FT	M	IN	CM	FT	M	FT	M	IN	CM	SQFT	SQMT	LBS	KG
MA-5B	10 12 15 17 20 meters	3	5.3 10m 1.0 12 m 4.8 15m 1.0 17m 3.6 20m	22	1.2:1	7.3	2.2	1.5	3.8	17.5	5.3	8.8	2.7	1 1/2	3.8	3.22	0.3	26.5	12
MA-5VA	10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95
MA-6VA	6, 10,12,15,17,20 m	1	1-2		1.2:1					14.7	4.48							6.5	2.95
R6000	20 + 10 + 6 meters	1	3		<1.2:1					19	8.7			1 3/4	4.4	1.5	0.14	12.5	5.6
R8	40 30 20 17 15 12 10 6m	1	3		<1.3:1					28	7.3							23	10.5
A3S	20 15 10 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	27.8	8.5	15.5	4.7	2	5.1	4.4	0.41	30	13.6
A743 Kit	40m for A3				<1.2:1					35	10.7	15.5	4.7	2	5.1	0.06	0.06	7	3.2
A3WS	17 12 meters	3	8	25	<1.2:1	14	4.3	1.5	3.8	25	7.6	14.4	4.4	2	5.1	4.1	0.38	26.5	12
A103 Kit	30m for A3WS				<1.2:1					32	9.8	14.4	4.4	2	5.1	0.04	0.04	6	2.7
A4S	20 15 10 meters	4	8.9	25	<1.2:1	18	5.5	2	5.1	32	9.8	18.4	5.6	2	5.1	5.5	0.51	38	17.2
A744 Kit	40m for A4S				<1.2:1					35	10.7	18.4	5.6	2	5.1	0.3	0.03	7.5	3.4
TEN-3	10 meters	3	8	25	<1.2:1	8	2.4	1.4	3.5	18	5.5	9.8	3	2	5.1	2	0.19	10.5	4.8
XM240	40 meters	2	6	25	1.1:1	22	6.7	2.5	6.3	43	13.1	24.3	7.4	2.5	6.35	5.5	0.51	59	26.8
D3	20 15 10 meters	1			<1.2:1					26	7.9	4	1.2	2	5.1	0.9	0.08	11	5
D3W	17 12 meters	1			<1.2:1					34	10.4	5	1.5	2	5.1	0.9	0.08	13	5.9
D4	40 20 15 10 meters	1			<1.2:1					36	11	5.5	1.7	2	5.1	1.3	0.12	15.5	7
D40	40 meters	1			<1.2:1					42	12.8	6.5	2	2	5.1	1.7	0.16	15	6.8
AR-10	10 meters	1	3		<1.2:1					17.6	5.4			1 1/4	3.2	1 2/3	0.16	5	2.3

Due to rapidly increasing raw material and transportation costs, call for availability and pricing.

Cushcraft VHF / UHF Antennas

Model	Frequency Coverage	Ele	FWD Gain dBi	Max F/B dB	Conn	Polarization		Boom Length		Longest Ele(Ht)		Turning Radius		Max Mast Dia		Wind Surf Area		Shipping Weight		HRO Price
						HORZ	VERT	FT	M	FT	M	FT	M	IN	CM	SQFT	SQMT	LBS	KG	
A13B2	144-148	13	15.8	26	U	Y	Y	15	4.6	3.4	1	8.9	2.7	2	5.1	1.8	0.17	9.5	4.3	\$239.95
A17B2	144-145	17	18	26	N	Y	N	31	9.4	3.4	1	17.3	5.3	2	5.1	3.9	0.36	18	8.2	\$369.95
224WB	222-225	4	10.2	24	U	Y	Y	3	0.09	2.2	0.7	3	0.9	2	5.1	0.23	0.02	2.5	1.1	\$99.95
A50-3S	50-54	3	8	20	U	Y	N	6	1.8	9.8	3	6	1.8	2	5.1	1.8	0.17	8.5	3.9	\$139.95
A50-5S	50-54	5	10.5	24	U	Y	N	12	3.7	9.8	3	7.5	2.3	2	5.1	2.7	0.25	13	5.9	\$199.95
A50-6S	50-54	6	11.6	26	U	Y	N	20	6.1	9.8	3	11	3.4	2	5.1	4.5	0.42	22	10	\$399.95
A148-3S	144-148	3	7.8	25	U	Y	Y	2.8	0.9	3.3	1	2.8	0.9	2	5.1	0.27	0.03	3	1.4	\$66.95
A148-10S	144-148	10	13.2	24	U	Y	Y	12	3.7	3.3	1	6	1.8	2	5.1	1.2	0.11	6	2.7	\$129.95
A148-20T	144-148	20	13	20	U	Y	Y	10.8	3.3	3.3	1	6.8	2.1	1.5	3.8	1.4	0.13	7.5	3.4	\$219.95
A449-6S	440-450	6	10.5	18	U	Y	Y	2.9	0.09	1.1	0.3	2.9	0.9	2	5.1	0.3	0.03	2.5	1.1	\$72.95
A430-11S	430-440	11		20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6	\$99.95
A449-11S	440-450	11	13.2	20	U	Y	Y	4.2	1.3	1.1	0.3	2.8	0.9	2	5.1	0.39	0.04	3.5	1.6	\$109.95
AR270	144-148	1	3		U		Y			3.75	1.13			2	5.1	0.27	0.03	2	0.9	\$129.95
	430-450	1	5.5		U		Y													
AR270B	144-148	1	5.5		U		Y			7.7	2.3			2	5.1	0.47	0.044	2.4	1.09	\$179.95
	430-450	1	7.5		U		Y													
A270-6S	144-148	3	7.8	20	U	Y	Y	2.8	0.09	3.4	1	2.8	0.9	2	5.1	0.3	0.03	3.5	1.6	\$119.95
	430-450	3	7.8	18	U															
A270-10S	144-148	5	10	20	U	Y	Y	6.2	1.9	3.4	1	6.2	1.9	2	5.1	0.73	0.07	5	2.3	\$159.95
	440-450	5	10	18	U															
A6270-13S	6m, 2m, 70cm	5	8 6m 10 2m 10 70cm	20	U	Y	Y	8.8	2.56	9.7	3	6.16	1.87	2	5.1	2.52	0.23	9.5	4.3	\$279.95
AR-6	50-54		3		U	N	Y			10.1	3.1			1.25	3.2	0.37	0.03	4	1.8	\$99.95
AR-2	135-160		3		U	N	Y			3.9	1.2			1.25	3.2	0.21	0.02	2	0.9	\$64.95
AR-450	440-460		3		U	N	Y			1.4	0.42			0.75	0.88	0.1	0.01	2	0.8	\$47.95
ARX-2	137-160				U	N	Y			9.3	2.8			1.25	3.2	0.33	0.03	2.5	1.1	\$79.95
ARX-2B	134-164		7		U	N	Y			14	4.3			1.25	3.2	0.5	0.05	3.5	1.6	\$99.95

Comet Dual-Band Antennas

MODEL	BANDS	GAIN	MAX PWR Watts	CONN	WGT Lbs' oz"	LEN FT' In"	MAX Wind Speed MPH	HRO Price
Dual Band Base Station Repeater Antennas								
GP-9/GP-9N*	2m/70cm	8.5/11.9	200	SO/N	5'11"	16'6"	90	\$199.95
GP-6	2m/70cm	6.5/9.0	200	SO-239	3'8"	10'5"	90	\$149.95
GP-3	2m/70cm	4.5/7.2	200	SO-239	2'12"	5'11"	112	\$99.95
GP-1	2m/70cm	3.0/6.0	200	SO-239	2'	4'2"	135	\$74.95
Dual Band Mobile Antennas - All Black Anodized								
SBB-7/SBB-7NMO	2m/70cm	4.5/7.0	70	PL/NMO	-	4'7"	-	\$79.95
SBB-5/SBB-5NMO	2m/70cm	3.0/5.5	120	PL/NMO	-	3'2"	-	\$58.95
SBB-2/SBB-2NMO	2m/70cm	2.15/3.8	60	PL/NMO	-	20"	-	\$42.95
B-10M / B10NMO	2m/70cm	-2.15	50	PL/NMO	-	12"	-	\$42.95

* some longer antennas require additional freight

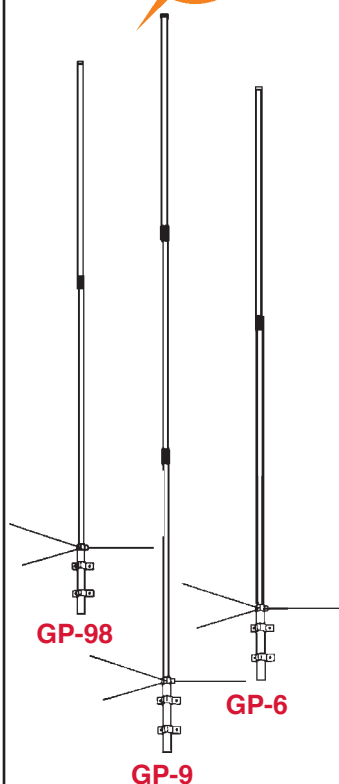
Comet Tri-Band Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	WGT Lbs' oz"	LEN FT' In"	Max Wind Speed MPH	HRO Price
TriBand Base Station Repeater Antennas								
GP-15 *	6m/2m/70cm	3/6.2/8.6	200	SO-239	2'15"	7'11"	90	\$169.95
GP-98	2m/70cm/23cm	6.5/9.0/13.5	100	N-Female	3'6"	9'4"	90+	\$189.95
CX-333	2m/220/70cm	6.5/7.8/9.0	120	SO-239	3'10"	10'2"	112	\$179.95
TriBand Mobile Antennas								
SBB-15	6m/2m/70cm	2.15/4.5/7.2	120	PL-259	-	4'10"	-	\$84.95
SBB-14	6m/2m/70cm	0/3.5/6.0	120	PL-259	-	3'7"	-	\$59.95
SBB-14NMO	6m/2m/70cm	0/3.5/6.1	120	NMO	-	3'7"	-	\$67.95
SBB-97	2m/70cm/23cm	3.0/6.8/9.6	100	N-Male	-	3'3"	-	\$84.95
SBB-94	2m/70cm/23cm	2.15/5.1/7.2	60/30 (1.2)	N-Male	-	24"	-	\$69.95
SBB-224	2m/220/70cm	2.15/3.2/5.5	150	PL-259	-	3'1"	-	\$79.95
SBB-224NMO	2m/220/70cm	2.15/3.2/5.5	150	NMO	-	3'1"	-	\$78.95
HF Antennas								
UHV-6	40/(20)/(17*)/15/10/6/2m/70cm	HF 0 dBi 2m 2.15 dBi 70cm 5.5 dBi	120 SSB HF 100W FM 6-70cm	PL-259	MAX 1'4"	MAX 6'4"	-	\$159.95
*L-14	Opt 20m coil for UHV-6						-	\$31.95
*L-18	Opt 17m coil for UHV-6						-	\$29.95
*L-3.5	Opt 75/80m coil for UHV-6						-	\$34.95
CHA-250B	Ground Plane 3.5-57 MHz		150W SSB HF 125W CW	SO-239	7'11"	23'8"	67.5	\$399.95

* For the UHV-6 optional bands.

6 Meter Antenna

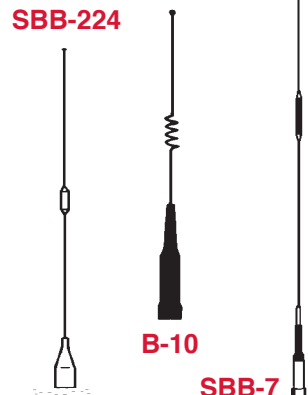
MODEL	Description	FREQ	GAIN	F/B	Max Pwr Watts	CONN	SWR	LEN FT'In"	HRO Price
CA-52HB4	4 element beam	50-54 MHz	-	19 dB	400 W PEP	SO-239	<1.5:1	10'6 Boom	\$129.95



Dual- & Tri-band VHF / UHF

Comet developed the Super Linear Converter (SLC) to increase actual gain of dual and tri-band antennas.

- A complete pre-formed phasing coil and phosphorus copper element eliminate additional components and gain loss.
- The SLC is electrically very efficient, providing a low angle of radiation, directly to the horizon.
- Comet sectional antennas use ABS (Transparent to RF) connecting joints for the finest pattern and easiest assembly.



2 m and HT Antennas

MODEL	BANDS	GAIN	Max Pwr Watts	CONN	LEN FT/In	HRO Price
Single Band Antennas						
SBB-25/SBB-25NMO	2m	4.1	100	PL-259/NMO	4'8"	\$48.95
HT Antennas						
CH-32 MINI Ant	2m/70cm	—	10	BNC	1.75"	\$33.95
MH-510	6m/2m/70cm	0/0/3.2	10	SMA	20.75"	\$37.95
MH-511	6m/2m/70cm	—	10	SMA	4.25"	\$33.95
HT-224	2m/220/70cm	1.3/1.4/1.8	10	SMA	11"	\$47.95
SMA-501 MINI Ant	2m/70cm	—	10	SMA	1.5"	\$29.95
SMA-3	2m/70/23cm	1.2/1.7/3.4	—	SMA	9.75"	\$41.95
SMA-24/SMA-24J	2m/70cm	2.15/5.3	20	SMA/Rev SMA	17.5	\$24.95
BNC-24	2m/70cm	—	20	BNC	17.5	\$24.95
SMA-503/SMA-503J	2m/70cm	—	10	SMA/Rev SMA	8.5"	\$29.95
CH-75	2m/70cm	-3.2	50	BNC	14.75	\$25.95

Comet High-Power Duplexers and Triplexers

Zinc-alloy, die-cast, twin cavity, low input loss, high-isolation, and high-power. Modernize your station with Comet high-performance antenna products.

MODEL	PORT	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol dB	Mix Conn	Port Conn	HRO Price
CF-416A (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads PL-259 w/leads	\$49.95
CF-416C (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	N-Female	PL-259 w/leads N-Male w/leads	\$54.95
CF-4160I (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads N-Male w/o leads	\$48.95
CF-4160K (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.1 0.2	60 60	SO-239	PL-259 w/o leads PL-259 w/o leads	\$48.95
CF-416B (2m/70cm)	LPF HPF	1.3-150MHz 400-540MHz	450 300	800 500	0.15 0.25	60 60	SO-239	PL-259 w/leads N-Male w/leads	\$49.95
CF-706A (2m/70cm)	LPF HPF	1.3-90MHz 75-470MHz	175 175	350 350	0.5 0.5	40 40	SO-239	PL-259 w/leads PL-259 w/leads	\$69.95
CF-530 (6m/125-470)	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$74.95
CF-530C (6m/125-470)*	LPF HPF	1.3-90MHz 125-470MHz	350 350	600 600	0.2 0.2	45 45	PL-259	SO-239 w/o leads SO-239 w/o leads	\$74.95
CF-360A (10m/6m)	LPF HPF	1.3-30MHz 50-470MHz	350 350	600 600	0.2 0.2	45 45	SO-239	PL-259 w/leads PL-259 w/leads	\$69.95
CFX-4310C (2m/70cm/1.2)	LPF BPF HPF	1.6-60MHz 100-150MHz 350-500MHz 840-1.4GHz	600 450 300 100	1KW 800 500 200	0.15 0.25 0.25 0.3	50 50 50 50	N-Female	PL-259 w/o leads PL-259 w/o leads N-Male w/o leads	\$79.95
CFX-514 (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.2 0.25 0.3	55 55 55	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	\$79.95
CFX-514J (6m/2m/70cm)	LPF BPF HPF	1.3-90MHz 130-200MHz 380-500MHz	450 450 300	800 800 500	0.15 0.2 0.25	55 55 55	SO-239	SO-239 w/o leads SO-239 w/o leads SO-239 w/o leads	\$79.95
CFX-324A (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/leads PL-259 w/leads PL-259 w/leads	\$88.95
CFX-324B (2m/220/70cm)	LPF BPF HPF	1.3-150MHz 200-320MHz 390-500MHz	350 350 350	600 600 600	0.2 0.25 0.3	40 40 40	SO-239	PL-259 w/o leads PL-259 w/o leads PL-259 w/o leads	\$85.95

* To run multiple antennas with the Yaesu FT-8900

DUPLEXERS

Dual 2 m / 440 MHz

2 m / 70 cm Mobile Antenna

**Now with
NMO Connector**

CA-2x4SRNMO

Comet's popular CA-2x4SR broadband mobile antenna now is available with an NMO connector. Black anodized finish. 3.8 / 6.2 dBi gain.

HRO Price \$69.95

Flexible Dual-Band SBB-1

Convenient, very flexible 2 m / 70 cm 17" antenna. Comes with either a gold-plated PL-259 (Model SBB-1) or NMO connector (Model SBB-1NMO).

Gain:

146 MHz 1.5 dBi 1/4 wave
446 MHz 2.15 dBi 1/2 wave

Max Power:

60 Watts

VSWR:

1.5:1 or less

HRO Price

\$42.95

Dual-Band Mag Mount Antenna M-24

Economical black anodized 2 m / 70 cm antenna is 19.5" tall and comes with 13 feet of RG-58/U coax and either a gold-plated PL-259 (Model M-24M) or BNC connector (Model M-24B) or model M-24S (SMA) soldered on.

Gain 146 MHz:

1.7 dBi 3/8 wave

Gain 446 MHz:

4.1 dBi 1/4 + 5/8 wave

Max Power:

80 Watts

VSWR:

1.5:1 or less

Impedance:

50 Ohm

HRO Price

\$39.95

M-24M

Duplexer

All-Female Duplexer CF-4160N

1.3-170 / 350-540 MHz duplexer with three N-female connectors allows the user to attach their own low loss jumpers in the length needed.

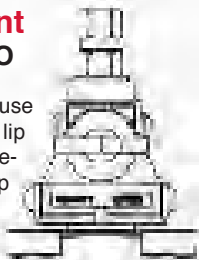
HRO Price \$58.95

ANTENNA MOUNTS

Mounts

Universal Mount CP-5M / CP-5NMO

These universal mounts use the heavy-duty RS-730 lip bracket. Each includes 5 meters (16'6") of deluxe 2-step coax and an antenna mount connector: gold-plated PL-259 on coax end with detachable barrel for easy installation. 18 inch lead of mini RG-174 coax for easy entry through the weather seal. Choose the model that has the connector for the antenna you are using.



Roof Rack Mount

RS-660U



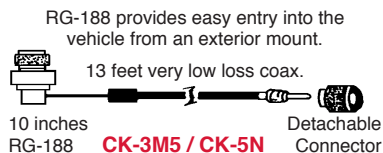
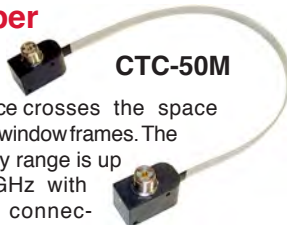
This new roof-rack mount opens wider than the old version – up to 2.5 inches – and supports bigger antennas.

HRO Price \$37.95

Window Gap Jumper

CTC-50M

This device crosses the space between window frames. The frequency range is up to 1.3 GHz with SO-239 connectors. Max pwr HF 100 W PEP, VHF 60 W, UHF 40 W, low loss, 50 ohm impedance. **HRO Price \$54.95**



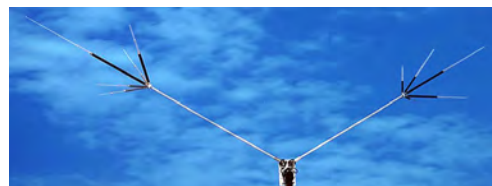
Comet Mobile Mounting Systems

Comet has a wide variety of mobile mounts. Choose the mount and coax cable assembly that best fits your personal needs. All Comet cables have detachable connectors.

MODEL	DESCRIPTION	HRO Price
Mounts with Coax Cable Installed		
CP-5M	Universal multi-angle lip mount w/deluxe cable SO-239/PL-259 Conn	\$69.95
CP-5NMO	Same as CP-5M but with NMO/PL-259 Conn	\$69.95
HD5-3/8-24	3/8-24 heavy duty lip mount w/ PL-259 connector	\$69.95
LD-5M	Light duty lip mount, 16'4" deluxe cable assembly, UHF Conn	\$55.95
CM-5M	Standard heavy-duty mag mt. with RG-58A/U, coax, UHF conn, max antenna height 4 ft	\$24.95
Mounting Brackets Only, No Coax		
RS-840	Heavy duty lip mount, low profile, accepts SO-239 connector	\$36.95
RS-730	Heavy duty universal lip mount, accepts SO-239 connector	\$32.95
RS-720	Medium duty universal lip mount, accepts SO-239 connector	\$29.95
RS-720NMO	Medium duty universal lip mount, accepts NMO connector	\$29.95
RS-520	Light duty universal lip mount, accepts SO-239 connector	\$29.95
Coax Cable Assemblies		
CK-3M5	17 foot high-quality cable includes 12" RG-188 to avoid water leak/cable damage. UHF Conn	\$42.95
CK-3M	Same as CK-3M5 but 9' 9" of deluxe cable assy, UHF Conn	\$35.95
CK-5N	13' 6" of deluxe 2-step cable assembly, N- Conn	\$49.95
5D4N	13' 6" low loss (2400 MHz) coax cable, N-conn	\$34.95
3D4N	13' 6" low loss (1200 MHz) cable assy, N-conn	\$32.95
Antenna Connector Adapters		
AD-25M	Turns an SO-239 mount into an NMO mount	\$14.95
AD-15M	Turns an NMO mount into an SO-239 mount	\$17.95
AD-10N	Turns an NMO mount into an N-female mount	\$17.95

HF ANTENNAS

HF Antennas



HF Rotatable Dipole CHV-5X

The CHV-5X is a 5 band rotatable dipole covering 40 / 20 / 15 / 10 / 6 meters.

- Each band is independently tunable.
- Turning radius 7 feet. Weighs 5 lb. 14 oz.
- VSWR less than 1.2:1 at center frequency.
- Impedance 50 ohms. Stainless hardware.
- CBL-2500 2.5 kW balun included.
- Max power: 150 Watts SSB 40 / 20 m; 220 Watts SSB 15 / 10 / 6 m.
- SO-239 connector. Mast required 1- 2.5 inch.

HRO Price \$319.95

40 / 20 / 20 m Rotatable Dipole H-422

This broad-band, compact, rotatable dipole is designed to offer excellent performance even when mounted only 10-15 ft. above ground in a V shape.

Heavy duty hardware and 2.5 kW balun are included. During assembly the user chooses any of the three pre-drilled holes to tune the 20 / 15 / 10 m SWR dips to the low- mid- or upper-band ranges simultaneously. 40 m TX bandwidth tunes independently of the other three bands.

- Length "V" shape 24' 5", Horizontal 33' 10".
- VSWR less than 1.5:1 or less after tuning.
- Impedance 50 ohms. Stainless hardware.
- Wind Load 3.01 sq feet.
- Max Power 1000 W, SSB / 500 W FM.
- SO-239 connector.

HRO Price \$369.95

40 m - 70 cm Mobile Antenna UHV-6

Without HF coils attached, the UHV-6 is a tribander for 6 m / 2 m / 70 cm. The top of the element has a threaded socket for the 40 m, 15 m, or 10 m coils (included), making the UHV-6 a quad-band antenna.

- Optional coils for 80 m, 20 m, and 17 m.
- Easy to mount and configure.
- Fold-over hinge included.
- GAIN on 2 m: 2.15 dBi; 70 cm: 5.5 dBi.
- Length 48" to approx. 76" maximum.

HRO Price \$159.95

Quad Band 10 / 6 / 2 m / 70 cm UHV-4

Developed for the Yaesu FT-8900. The 10 m and 6 m bands tune independently and will tune for SSB and FM. Length approx. 54".

HRO Price \$119.95





Hustler delivers reliability and performance Beyond Your Expectations!

VHF / UHF Base Antennas

2m Verticals

These easy-to-assemble verticals are made of aluminum and high-strength fiberglass. When disassembled the longest part is about 4'. Choose 3, 6, or 7 dB gain and the overall length that best suits your application.



G7-144

HRO Price \$199.95

- Frequency range: 144-148 MHz.
- Bandwidth: 4 MHz.
- Gain: 7 dB.

G6-144B

HRO Price \$139.95

- Frequency range: 143-149 MHz.
- Bandwidth: 6 MHz.
- Gain: 6 dB.

G3-144

HRO Price \$69.95

- Freq. Range: 144-148 MHz
- Bandwidth: 4 MHz.
- Gain: 3dB.

220 & 440 Verticals

G7-220

HRO Price \$185.95

The G7-220 is of similar design and construction as the G7-144.

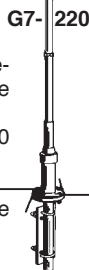
- Freq. Range: 220-225 MHz.
- Bandwidth: 5 MHz.
- Construction: High strength fiberglass and aluminum.
- Gain: 7 dB.

G6-440

HRO Price \$199.95 + frt

The G6-440 is of similar design and construction as the G6-270R.

- Frequency range: 440-450 MHz.
- Bandwidth: 10 MHz.
- Construction: One piece radome.
- Gain: 6 dB.



Repeater Antennas

The Spirit Series

Hustler's omnidirectional, collinear design base station antennas are enclosed in a rugged fiberglass radome that will help minimize pattern variations due to high winds or extreme conditions. Models are available for 144, 220, 440, 900 MHz, and 1.2 GHz. The gain will be unity, 3, 6, 9, or 12 dB depending on the frequency.

Call HRO for quotes on custom frequencies.

2m / 70 cm Dual Band

G6-270R

Dual band
2 m / 70 cm

HRO Price \$199.95

The G6-270R is a combination G6-144B and G6-440. It is factory tuned for quick and easy installation.

- Frequency range: 144-148 MHz / 435-445 MHz.
- Gain: 6 dB.
- Bandwidth: 4 MHz – 2 m / 10 MHz – 70 cm.
- One piece radome.
- VSWR: < 1.5:1 @ resonance.



HF Base Antennas

HF Multi-band

6-BTV

10, 15, 20, 30, 40, 75 / 80 m

HRO Price \$219.95

5-BTV

10, 15, 20, 40, 75 / 80 m

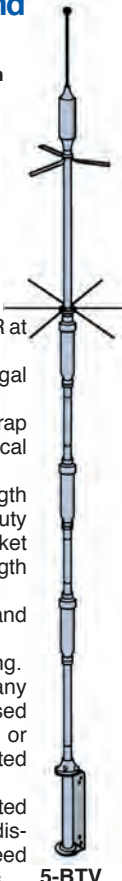
HRO Price \$199.95

4-BTV

10, 15, 20, 40 m

HRO Price \$169.95

- Broadbanded, low VSWR at band edges.
- Power capability – full legal limit on SSB or CW.
- Solid one-inch fiberglass trap forms for optimum electrical and mechanical stability.
- Heavy wall, high strength aluminum tubing, heavy duty aluminum mounting bracket and low loss, high strength insulators.
- Stainless steel clamps and hardware.
- Easy assembly and tuning.
- Single line feed with any length of 50 ohm coax used as ground mount with or without radials, or elevated mount with radials.
- All the BTV's can be mounted in a piece of PVC and disguised as a flagpole in deed restricted neighborhoods.



5-BTV

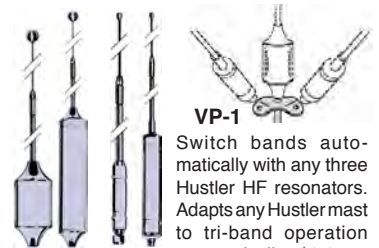
Model 30-MTK

30 meter add on kit for the 4 and 5-BTV

BASE ANTENNAS

HF Resonators

Customize your HF mobile system with Hustler products. Resonators may be used separately on one of the masts or up to three at a time with the VP-1. Add the QD-2, springs and mounts as needed for your installation.



VP-1

Switch bands automatically with any three Hustler HF resonators. Adapts any Hustler mast to tri-band operation automatically. \$8.95

Hustler HF Resonators

Model	Type	Band	Power SSB	Bandwidth 2:1 SWR	Weight lbs	HRO Price
RM-10	Standard	10 m	400 W	150-250 KHz	0.41	\$18.95
RM-11	Standard	11 m	400 W	150-250 KHz	0.41	\$19.95
RM-12	Standard	12 m	400 W	90-120 KHz	0.41	\$18.95
RM-15	Standard	15 m	400 W	100-150 KHz	0.42	\$18.95
RM-17	Standard	17 m	400 W	120-150 KHz	0.44	\$25.95
RM-20	Standard	20 m	400 W	80-100 KHz	0.46	\$25.95
RM-30	Standard	30 m	400 W	50-60 KHz	0.84	\$28.95
RM-40	Standard	40 m	400 W	40-50 KHz	0.84	\$30.95
RM-60	Standard	60 m	400 W			\$30.95
RM-75	Standard	75 m	400 W	25-30 KHz	1.05	\$32.95
RM-80	Standard	80 m	400 W	25-30 KHz	1.05	\$32.95
RM-10-S	Super	10 m	1 kW	250-400 KHz	1	\$27.95
RM-15-S	Super	15 m	1 kW	150-200 KHz	1.2	\$28.95
RM-20-S	Super	20 m	1 kW	100-150 KHz	1.25	\$32.95
RM-40-S	Super	40 m	1 kW	50-80 KHz	1.8	\$41.95
RM-75-S	Super	75 m	1 kW	50-60 KHz	2.1	\$57.95
RM-80-S	Super	80 m	1 kW	50-60 KHz	2.1	\$57.95

Hustler Base Antennas

Model	Band	Gain	Connector	Height ft(m)	HRO
G7-144	2 m	7 dB	N Female	16.3 (4.6)	\$199.95
G6-144B	2 m	6 dB	SO-239	9.8 (2.9)	\$139.95
G3-144	2 m	3 dB	SO-239	7.5 (2.3)	\$ 69.95
G7-220	1.25 m	7 dB	N Female	10.2 (3.0)	\$185.95
G6-440	70 cm	6 dB	N Female	7.3 (2.2)	\$199.95
G6-270R	2 m / 70 cm	6 dB	N Female	7.6 (2.3)	\$199.95
6-BTV	10-30-80 m			24.0 (7.2)	\$219.95
5-BTV	10 to 80 m			25.0 (7.5)	\$199.95
4-BTV	10-40 m			21.4 (8.4)	\$169.95

Hustler VHF / UHF Mobile Antennas

Model	Band	Gain	Power	Mount	HRO
LMC-270	2 m/70 cm	2.4/4	100	NMO	\$36.95
MX-270	2 m/70 cm	2.4/4	100	Mag	59.95
LMG-144	2 m	3.4	200	NMO	27.95
BBG-144	2 m	3.4	200	NMO	52.95
BBG-440-5	70 cm	5	200	NMO	59.95
BBGT-144	2 m	3.4	200	Trunk	49.95
MX-220	1.25 m	3.4	200	Mag	37.95
MX-2B	2 m	3.4	200	Mag	42.95
MX-440B	70 cm	3.4	200	Mag	63.95
SF-2	2 m	3.4	100	3/8X24	17.95
SF-220	1.25 m	3.4	100	3/8X24	17.95
RX-2	2 m	3.4	100	Mag	28.95
RX-220	1.25 m	3.4	100	Mag	28.95
RX-440	70 cm	5	100	Mag	29.95
CG-144	2 m	5.2	200	3/8X24	39.95
CG-220	1.25 m	5.2	200	3/8X24	39.95
CGT-144	2 m	5.2	200	Trunk	59.95
CGT-220	1.25 m	5.2	200	Trunk	59.95
THF	140-500	Unity	200	Trunk	25.95
UGM	140-500	Unity	25	Mag	23.95

MOBILE ANTENNAS / MOUNTS

VHF / UHF Mobile Antennas

Dual Band

Dual band models for 144 / 440 MHz give you 2.4 dB / 4 dB gain. The antennas are rated at 100 Watts.

LMC-270

- NMO style coil
- Chrome top
- Coil and whip only

MX-270

- Chrome top.
- NMO style magnetic mount.
- 17 ft RG58/U coax.
- PL-259 connector.



Magnetic Mounts

Models for 144, 220 and 440 MHz are power rated for 200 Watts. Each has an NMO-style coil and a magnetic mount.

MX-2 144 MHz 3.4 dB gain

MX-220 220 MHz 5.0 dB gain

MX-440 440 MHz 5.0 dB gain

- Chrome top.
- 10 oz magnet.
- 17 ft RG58/U coax.
- PL-259 connector.



MX-2B 144 MHz 3.4 dB

MX-440B 440 MHz 5.0 dB

- Same as above but all black coil.

Collinear

Collinear models for 144 MHz and 220 MHz provide 5.2 dB gain. They are power rated for 200 Watts. All have a swivel ball for vertical positioning.

CG-144 6 MHz bandwidth

CG-220 4 MHz bandwidth

- 3/8"x24 thread
- 5/8 over 1/4wave.

CGT-144 6 MHz bandwidth

CGT-220 4 MHz bandwidth

- Trunk mount base.
- 17 ft RG58/U coax.
- PL-259 connector.



Unity Gain

An antenna to custom trim as needed for VHF or UHF frequencies. Covers 140-500 MHz.

THF
Trunk Lip Mount

THF

UGM
Magnet Mount



Coil and Whip

Models for 144 or 440 MHz are power rated for 200 Watts. NMO-style coil on each requires an NMO mount.

LMG-144 3.4 dB gain

- Chrome top and bottom.
- Contact- silver plated push pin.

LMG

BBG-144 3.4 dB gain

BBG-440-5 5.0 dB gain

- Chrome top, swivel ball and spring.

BBGT-144 3.4 dB gain

- Includes trunk mount.
- 17 ft RG58/U coax.
- PL-259 connector.

BBG



5/8 Wave



Base-loaded 5/8 wave models for 144 MHz, 220 MHz and 440 MHz are power rated for 100 Watts.

SF-2 144 MHz 3.4 dB gain

SF-220 220 MHz 3.4 dB gain

- 3/8" x 24 thread.
- Mount to any Hustler mount.

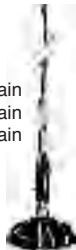
RX-2 144 MHz 3.4 dB gain

RX-220 220 MHz 3.4 dB gain

RX-440 440 MHz 5.0 dB gain

- 3 oz magnetic mount.
- 15 ft RG-58/U coax.
- PL-259 connector.

RX-2



Accessories



MKR-2 Radial Kit

Used to convert RX Series, SF Series, & CG Series to fixed station operation. Contains three radials. Mount can accept any 3/8 x 24 threaded mount. \$28.95

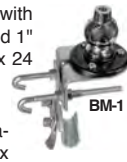


QD-2 Quick Disconnect

Remove antennas easily with a push and twist release. Compression design of 100% stainless steel. 3/8 x 24 threads. \$24.95

Mobile Mounts

• **BM-1** Bumper mount with stainless steel strap and 1" diameter ball with 3/8 x 24 threads. \$27.95



• **MBM** Powerful 5" diameter magnet with 3/8 x 24 threads. 16' of RG58U coax with PL-259 connector. \$24.95

MBM



• **SSM-1** Heavy duty ball mount with 4" stainless steel spring with copper braided center conductor to prevent detuning. 180 degree adjustable. 2" diameter stainless steel ball. Accepts 3/8 x 24 antennas. \$52.95



SSM-1

• **SSM-2** Heavy duty 2" diameter stainless steel ball mount. 180 degree adjustable. Accepts 3/8 x 24 antennas. \$32.95

• **SSM-3** Heavy duty stainless steel 4" spring with 3/8 x 24 coupling stud. Copper braided center conductor to prevent detuning. \$29.95



C-32

• **C-32** Chrome plated 1" ball mount. Accepts 3/8 x 24 antennas. \$22.95

• **C-29** Stainless steel 4" spring. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. \$23.95

• **C-30** Chrome plated 4" spring. Copper braided center conductor to prevent detuning. \$21.95



C-30

• **RSS-2** Stainless steel 3" spring. Used for mobile antennas between resonator and mast. Copper braided center conductor to prevent detuning. Accepts 3/8 x 24 antennas. \$14.95

• **HLM** Trunk lip mount designed for hatch and slanted back vehicles. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$27.95



• **HOT** Trunk lip mount with easy off/on with thumb knob. 180 degree 1" diameter ball, which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$29.95



• **TLM** Trunk lip mount which accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$27.95



• **RVM** Recreational vehicle mount with heavy duty bracket. Easy antenna removal or lay down with thumb knob. 1" ball accepts 3/8 x 24 antennas. RG58U coax with PL-259 connector. \$23.95



All mounts below are supplied with 17' RG-58U cable.



CHMB



CHMA



CTMA

Model	Description	HRO Price
CHMA	3/8" Hole mount without connector	\$16.95
CHMA-B	3/8" Hole mount w/crimp-on BNC	19.95
CHMA-P	3/8" Hole mount w/crimp-on PL-259	15.95
CHMB	3/4" Hole mount without connector	19.95
CHMB-B	3/4" Hole mount w/crimp-on BNC	11.95
CHMB-P	3/4" Hole mount w/crimp-on PL-259	19.95
CHMA	NMO 10 oz mag w/solder-on PL-259	24.95
CTMA	Trunk mount without connector	13.95
CTMA-P	Trunk mount w/crimp-on mini UHF	24.95

Mobile Masts

Fold-Over Masts

MO-1

Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 15" above base. 3/8 x 24 threaded \$36.95

MO-2

Mobile mast 54" high for bumper, fender or hitch mounting. Folds over at 27" above base. 3/8 x 24 threaded \$36.95



Solid Masts

MO-3

Mobile mast 54" high for bumper, fender or hitch mounting. Solid aluminum with white vinyl coating. 3/8 x 24 threaded \$29.95

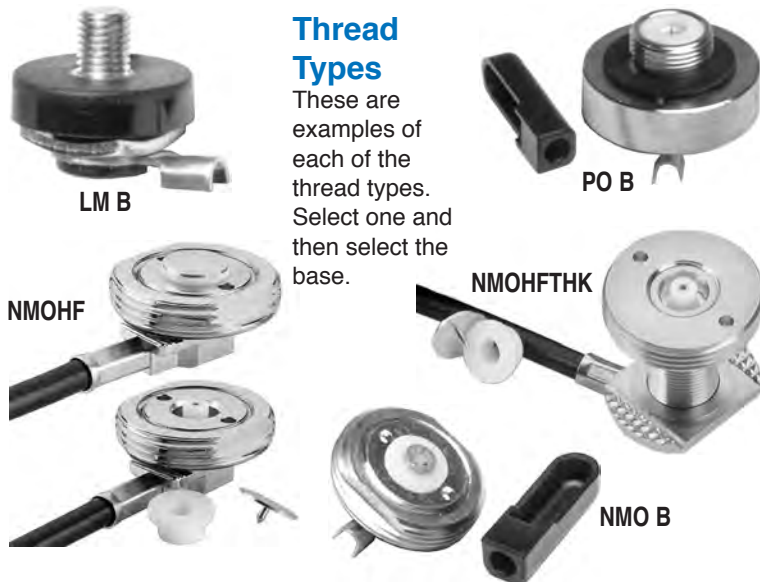
MO-4

Mobile mast 22" high for trunk or deck mounting. Three retuning tip rods included. 3/8 x 24 threaded \$24.95



Choosing Your Larsen Mobile Antenna

Choose your antenna configuration based on the frequency, base type (e.g., magnetic mount) and thread type (e.g., NMO). Keep in mind that it is necessary to select a base with the same mounting style as the antenna. Typical bases and styles are shown below.



Thread Types

These are examples of each of the thread types. Select one and then select the base.

Mount Configurations

In addition to the popular Motorola 3/4" (NMO) mounts shown here, mobile antennas for the Larsen mount (LM) and PO mount (PO) are excellent choices for amateur use. Each of these mounts comes in one of the thread types.

Mounts:

NMO K premium quality rooftop.

NMO MMR mag mount, 90# pull strength.

NMO TLP heavy duty trunk lid.

NMO TMB electropolished trunk gutter bracket.

NMO HF for low or high frequencies (pull center pin and insulator for high frequencies).

NMO HFTHK NMO thick mount (surfaces to 1/2" thick) high or low frequencies.



Magnetic Mount BNC MM BNC

Connectors: BNC on the mag and coax. Coax: RG 58 A/U, 12'



NMO MMR



NMO TMB



NMO TLP

NMO Series Antennas

Select an Antenna

Once the base and thread type are selected, the final step is to choose the antenna.

All Larsen mobile antennas meet the industry's most demanding specs for electrical efficiency and mechanical durability.

Gain antennas are made of a coil and a whip. Quarter wave antennas are just a whip.

- VSWR at 1.5 to 1 or less.
- Colors: Black coil base; chrome or all black whip.
- 3-year No-Nonsense Warranty.™
- Made in USA

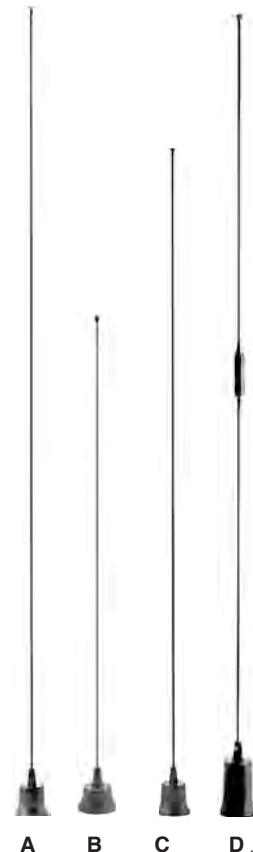
Scanner Antenna

Tri-Band Antenna NMO-

150 / 450 / 800

This is a great antenna for scanner operation. It is NOT tunable for amateur operation.

Frequency.... 150-165 /
..... 450-470 /
..... 806-940 MHz
Gain .. 2.14 dBi ± 1 dB
Mount.....NMO
Height16.5"



A NMO 150 B (2 m)
Frequency:..... 144-174 MHz
Gain:..... 3 dB
Electrical:..... 5/8 Wave
Height: 49"

B NMOQ C
Frequency:..... 144-448 MHz
Gain:..... Unity
Electrical:..... 1/4 Wave
Height: 22" max.

C NMO 220 B (1.25 m)
Frequency:..... 220-225 MHz
Gain:..... 3 dB
Electrical:..... 5/8 Wave
Height: 32"

D NMO 2 / 70
Frequency:..... 144-148 MHz
..... 442-448 MHz
Gain: 3.8 dB VHF; 2.4 dB UHF
Electrical:..... 5/8 wave VHF
..... Collinear UHF
Height: 34 3/4"

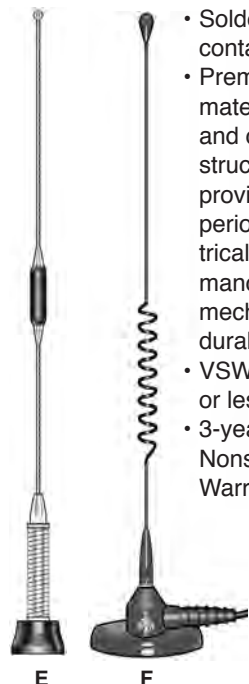
Call a
Helpful
Ham at
HRO for
Quotes
on Larsen
Antennas

MOBILE ANTENNAS

Dual-Band Antennas

Larsen dual band antennas provide excellent performance on 2 m and 70 cm. Each antenna is factory preset to guarantee optimal performance with no tuning required.

- A range of dual band configurations is available.
- Kulrod copper-plated 17-7 stainless steel rods for greater transmit range.



- Soldered contacts.
- Premium materials and construction provide superior electrical performance and mechanical durability.
- VSWR 1.5:1 or less.
- 3-year No-Nonsense Warranty™

E NMO 2 / 70 SH

Frequency: 144-148/440-450 MHz
Gain:Unity
Power:100 Watts
Type: VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base: NMO UHF base B w/spring
Height:17"

F MM 2 / 70 PL

Frequency: 144-148/440-450 MHz
Gain:Unity
Power:100 Watts
Coax: RG58 A/U Dual Shield, 12'
Pull strength:54 lbs.
Type: VHF: Center load 1/4 wave
..... UHF: Center load 3/4 wave
Base:3" round magnet mount
Connector: PL 259 installed
Weight:1 lb.
Height:17"

On-Glass Antennas

Larsen's advanced design techniques in glass-mount antennas result in superior transmit range plus tremendous mechanical durability. Glass mount performance is nearly identical to rooftop mounts, with no holes to drill. Properly installed on-glass antennas grip for years under demanding conditions, yet are easy to remove and remount.

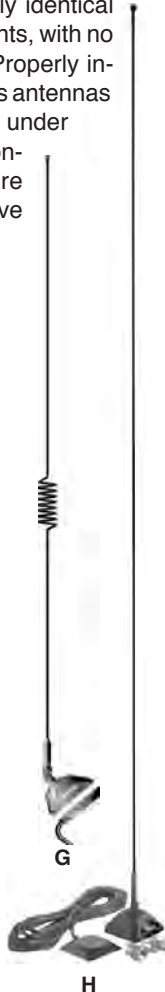
Dual Band

The KG 2 / 70 is a VHF half-wave and a UHF collinear. It comes with 14 feet of RG-58/U coax.

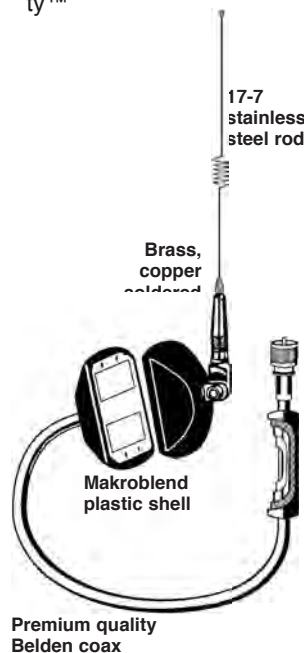
The antenna installs easily on any flat surface. Remove the whip without tools for car washes or low garages. **HRO Price \$119.95**

G KG 2/70-CX-PL (Dual)

Frequency: 144-148/442-448 MHz
Gain:2.4 dB VHF; 4.5 UHF
Power:50 Watts
Type:1/2 wave / Collinear
Connector: PL 259 (loose)
Height:32-3/4"



- Patented low-impedance design is electrically efficient.
- Single-band antennas are pre-cut, 1/2 wave design.
- Transformer outside vehicle.
- Copper plated whips.
- Rated 50 Watts output.
- VSWR at 1.5 to 1 or less.
- Less than .5 dB loss through glass vs. rooftop.
- New circuit board technology locks in solid state performance.
- 3M's best on-glass adhesive grip.
- Made in USA with 3 year No-Nonsense Warranty™



Single Band

H KG 144 PL (2 m)

Frequency:144-160 MHz
Gain:2.4 dB
Type:1/2 Wave
Connector: PL 259 (loose)
Height:45"

Rubber Ducks

KulDuckies

KulDuckies have outstanding transmitting range with 1.5:1 VSWR. Made of copper and brass radiators, they are scope tuned to precise frequencies. Constructed with soldered connections, plastisol dip process, injection-molded housings and silver plated contacts.

KulDuckies are available in Helical (VHF, UHF), HQ Helical (VHF), Dual Band, and Half Wave.



Dual Band

KD4 2 / 70

Amateur dual band KD antenna, BNC connector. **HRO Price \$38.95**

Helical

KD4 FREQ HQ

Helical 1/4 wave 136-222 MHz (specify frequency), 9 1/2" tall, BNC connector. **HRO Price \$24.95**

KD4 VHF

VHF helical 136-222 MHz (specify frequency), 8" tall, BNC connector. **HRO Price \$19.95**

KD4 UHF

UHF helical 406-512 MHz (specify frequency), 3" tall, BNC connector. **HRO Price \$19.95**

**Free UPS Brown Shipping in the Continental U.S.
on Most Orders Over \$100.**

HT ANTENNAS

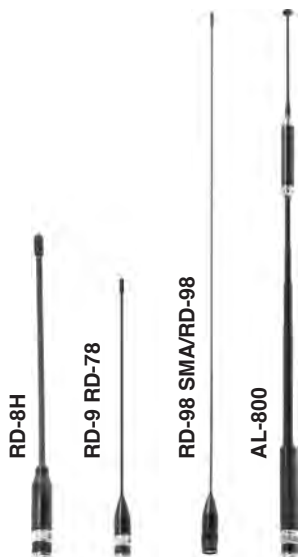
MOBILE ANTENNAS

Antennas for Handhelds

PRYME®

Radio Products

Duckies & Telescoping Antennas



VHF / UHF Dualband Antennas

RD-8H

144 MHz / 440 MHz, flexible 6.5" tall HT antenna, gold plated BNC connector. **HRO Price \$17.95**

RD-9

144 MHz / 440 MHz, thin 7" antenna, BNC connector. **HRO Price \$18.95**

RD-98

144 MHz / 440 MHz, 17" tall, 1/16" diameter HT antenna, BNC connector. **HRO Price \$24.95**

RD-98 SMA

144 MHz / 440 MHz, 17" tall, 1/16" diameter HT antenna, SMA connector. **HRO Price \$27.95**

AL-800

144 MHz / 440 MHz, telescoping antenna, extends to 34", collapses to 10". Whip replaceable with 9" rat tail (included), 3.2 / 5.5 dB gain, gold plated BNC connector. **HRO Price \$34.95**

Call for Quotes

On-Glass



Single Band 1/2-Wave

Larsen's full selection of on-glass antennas for single-band and dual band use are described on page 97. All single band antennas are pre-cut. A single 1/2 wave design provides 2.4 dB gain.

KG-144-PL 2 M HRO Price \$69.95

*Find more on-glass antennas
on page 97.*

2m / 70 cm Mobiles



Dual Band Antennas for 2m / 70 cm

Model	MaxPwr	Gain	Lgth	Conn	Finish
EX-107RB	80 W	2.6 / 4.9	29"	PL-259	Black
EX-107RBNMO	80 W	2.6 / 4.9	29"	NMO	Black



Dual Band Antenna for 2 m / 70 cm Model NMO 2 / 70 Black

Band	Freq MHz	Gain	Weight oz	HRO Price
2 m	144-148	2.5 dB	3.9	\$69.95
70 cm 5/8 collinear	440-450	5.5 dB		



Dual-Band Mobile Antennas

Model	Band	Freq MHz	Gain	Weight oz	HRO Price
500C	2 m	144-148	Unity	6	\$45.95
	70 cm	440-450			
Metropolitan	2 m	144-148	Unity	6	\$58.95
	1.25 m	220-225			
	70 cm	440-450			

Find more dual-band antennas:



See Page 91



See Page 100

Duplexers

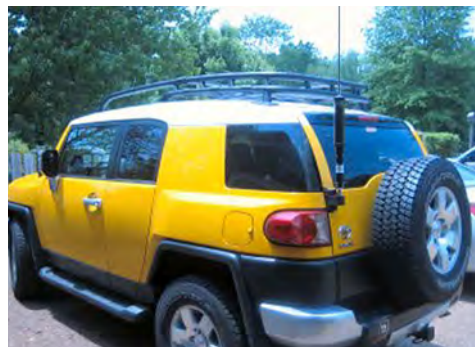
When using a single antenna with mobile radios that have separate 144 MHz and 440 MHz outputs, you must use a duplexer.

Comet has a wide variety of duplexers & triplexers with gold-plated connectors, high isolation and the highest power handling abilities. See page 92.

Diamond has a wide collection of duplexers and triplexers for coupling antennas and transceivers. See page 100.

Tarheel Antennas

Little Tarheel II 3.5 – 54 MHz Mobile HRO Price \$CALL



When properly installed on your vehicle the Little Tarheel II will provide continuous coverage from 3.5 to 54 MHz with the supplied whip. Like all of our motorized antennas, this model meets the highest standards but in a smaller size.

It comes with sensors pre-installed so if you decide to add one of the auto controllers (SDC-100 Simple Controller, SDC-102 Programmable Controller, Turbo Tuner, Antenna BOSS and BOSS II) now or later, everything is ready.

This antenna is for the person who wants to enjoy HF mobile with a more compact antenna. Don't let the small size fool you. The Little Tarheel II mounts higher on the vehicle so you have less ground loss and higher performance. Because of its smaller size, this antenna offers the convenience of a more common type of mount like the Diamond K400 Series, the Comet Series, or similar 3/8" stud type mount.

The Little Tarheel II comes as a package. All you need is a mount and a nice HF radio. Included standard with the antenna is: the whip, 20 feet of plug and play control cable, manual control box, ferrite decoupling core and 3/8 x 24 stud.

The antenna is finished with our Dupont Imron 5000 system in standard colors of black, white, red or silver. It also comes with the tough Lexan™ Weather Shield like its big brothers. This model also uses the commercial 12 volt gear motor.

The antenna has a ONE YEAR NO MATTER WHAT WARRANTY to the original owner.

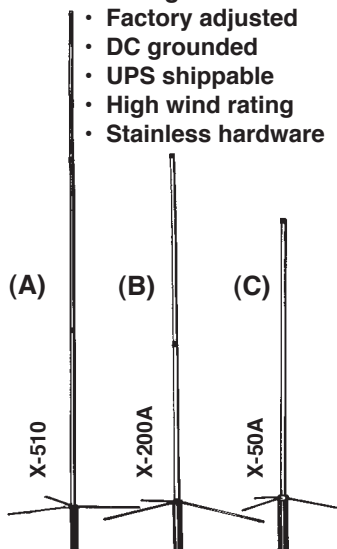
Specifications:

- Lower mast size: 1 1/2".
- Lower mast length: 16".
- Whip length: 32".
- Total length of antenna in 54 MHz position: 48".
- Total length of antenna in 3.5 MHz position: 54".
- Frequency coverage continuous: 3.5 - 54 MHz.
- Power rating: 200 Watts P.E.P.
- Typical SWR: 1.5 or less.
- Weight: 1.9 lbs.

Diamond Base Antennas

All base antennas grounded for lightning protection. Factory adjusted for American amateur bands; no tuning required.

- Wide-band performance
- Highest gain
- Fiberglass radome
- Factory adjusted
- DC grounded
- UPS shippable
- High wind rating
- Stainless hardware



1. 52-54 MHz only. DPGH62 is adjustable from 50-54 MHz.
2. 15-148 MHz, 100 Watts on 2 m, 200 Watts on 1-1/4 m & 70 cm.
3. 28/50 MHz 400 W PEP, 14/21 MHz 400 W PEP, 7 MHz 200 W PEP.

Model	Bands	Gain, dBi	Watts	Con. Type	WT (lbs)	Lth (ft)	MPH (no ice)	Fig	HRO Price
A502HB	6m Yag 2 elem.	6.3 dBi	400PEP	UHF	3.75	2.6			\$89.95
A144S5	2 m Yagi 5 elem.	6.0 dBi	100PEP	UHF	1.4	3.1			\$59.95
A430S10	70cm Yagi 10 elem.	13 dBi	100PEP	UHF	1.4	3.6			\$69.95
A430S15	70cm Yagi 15 elem.	14.8 dBi	100PEP	UHF	2.15	7.4			\$89.95
CP-22E	2 m	6.5	200	UHF	3	9	90	B	\$54.95
CP-5HS ¹	40/20/15/10/6 m		200v	UHF	6.6	11.8	80		\$379.95
CP-62	6m	5.5 dBi	200	UHF	9	22	80		\$199.95
CP-610	10m/6m	5.5/3.4 dBi	200	UHF	9	22	80		\$229.95
F-22A	2 m	6.7	200	UHF	5	10.5	112	B	\$94.95
F-23H	144-174 tunable	7.8	350	UHF	5	15	90	A	\$139.95
F-718	70 cm	11.5	250	N	5	15	90	A	\$199.95
MG-200	2.4 GHz	11		N	3	6	135	C	\$59.95
V2000A ¹	6m / 2m / 70cm	2.1 / 6.2 / 8.4	150	UHF	4	8.3	110	B	\$159.95
X-30A	2 m / 70 cm	3.0 / 5.5	150	UHF	2	4.5	135		\$69.95
X-50A	2 m / 70 cm	4.5 / 7.2	200	UHF	3	5.6	135	C	\$94.95
X-50NA	2 m / 70 cm	4.5 / 7.2	200	N	3	5.6	135	C	\$94.95
X-200A	2 m / 70 cm	6.0 / 8.0	200	UHF	4	8.3	112	B	\$124.95
X-300A	2 m / 70 cm	6.5 / 9.0	200	UHF	4	10	112		\$139.95
X-300NA	2 m / 70 cm	6.5 / 9.0	200	N	4	10	112	B	\$139.95
X510HDM	2 m / 70 cm	8.3 / 11.7	330/250	UHF	5	17.2	90	A	\$189.95
X-510HDN	2 m / 70 cm	8.3 / 11.7	330/250	N	5	17.2	90	A	\$189.95
X-510NJ	144/430	8.3 / 11.7	200	N	5	17.2	90	A	\$199.95
X-3200A ²	2m/1-1/4m/70cm	6.0 / 7.8 / 8.0	100@	UHF	4	10	112	B	\$179.95
X-6000A	2m / 70 / 23cm	6.5 / 9.0 / 10.0	100	N	5	10	112	B	\$174.95
BB7V	2-30 MHz		250	UHF	6	5/22	80		\$399.95
CP6AR	75/40/15/10/6 m		200	UHF	9.9	15.1	80		\$419.95
CP-725H	40 / 15 / 10 / 6 m		500-200	UHF	6.6	11.7	100		\$359.95

Diamond Handheld and Receiving Antennas

Model	Description	HRO Price
D-130J	Wideband discone 25-1500 MHz. 20 W transmit 50-1300MHz. 100 W 144-3000 MHz No cable.	\$104.95
D-130NJ	Wideband discone 25-1500 MHz. 20 W transmit 50-1300 MHz. 100 W 144-1300 MHz. No cable, Type-N	\$104.95
D-3000N	Wideband discone RX 25-3000MHz, TX 50-1300MHz 20 W 50 MHz, 20 W transmit 50 MHz. 100 W 144-1300 MHz, 67" tall, Type N	\$129.95
RH-3	2m / 70cm dual-band HT antenna. 1.75" BNC. 120-900 MHz receive.	\$26.95
RH-77CA	High gain 2m / 70cm dual-band HT antenna. Receive range to 900 MHz. BNC.	\$22.95
RHF-10	144/440. Air Band 6W. Rec Only 150/300/450/800/900MHz.BNC	\$21.95
RHF-40	Super flexible version of Model RH-77CA	\$27.95
SRHF-40	Super flexible 15" tail SMA 144 / 440MHz HT antenna	\$26.95
RH-205	2m HT antenna, telescopic, 5/8 fully extended, 47.5", 1/4 retracted, 9"	\$26.95
RH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" BNC. 10 watts.	\$24.95
RH-707	2m / 70cm dual-band, tiltable whip HT antenna. 8-1/4" BNC.	\$29.95
RH-951S	High gain 2m / 70 cm / 23 cm slim tri-band HT antenna Flexible. BNC (Wide band receive)	\$44.95
SRHF10	Hi Antenna, 144/440MHz. Air Band 6W, SMA, Rec Only 150/300/450/800/900MHz	\$21.95
SRJF-10	144/440 MHz. Air Band 150/300/450/800/900 MHz(Rec. Only). 2.75", 6W, SMA(F) 1/4 wave length	\$21.95
SRH-519	2m / 70cm slim dual-band HT antenna. Flexible. 8" SMA, 10 watts.	\$26.95
SRH-77CA	High gain 2m/70cm dual-band flexible HT antenna, SMA	\$22.95
SRJ-77CA	Same as SRH-77CA for Wouxun, SMA	\$24.95
SRH-229	For Alinco DJ-G29T. High gain, flexible whip, 13", 220-900 MHz, 10W, 4dB, SMA	\$32.95
SRH-320A	2m/1-1/4m/70cm tri-band HT antenna. Flexible. SMA. 10 watts	\$46.95
SRH-789	Telescoping handheld antenna 95-1100 MHz, 6 sections, folds at base	\$32.95
RH-789	Same as SRH-789 but BNC connector	\$32.95
SRH-805	2m / 70cm / 23cm tri-band HT antenna. 1.75" SMA, 10 watts.	\$26.95
SRH-815	2m / 70cm / 23cm tri-band HT antenna. Flexible. 6" SMA, 6 watts.	\$31.95
SRH-940	6m /2m /440 MHz SMA HT antenna	\$39.95
SRH-999	6m /2m / 70cm / 23cm quad-band HT antenna. Flexible. 21 1/4" SMA, 10 watts.	\$54.95

Specialty Antennas

High Power 2 m / 70 cm Mobile

Dual-band mobile antenna. 300 Watts (2 m) and 250 Watts (70 cm). Use K400 and K600 series mounts. **NR7900A HRO Price \$84.95**

Quad Band FM

10 m / 6 m / 2 m / 70 cm quad FM band antenna for FT8900R radio or multi radio applications. Use K400 and K600 series mounts. **CR8900A HRO Price \$99.95**

2m / 70cm Mobile

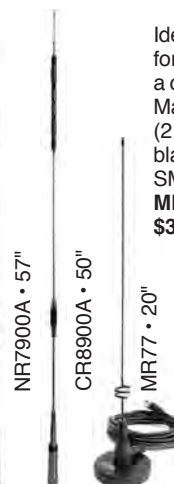
Ideal antenna for increased performance of HT radio or where a compact antenna is required. Magnetic mount base. 1/4 wave (2 m) and 1/2 wave (70 cm), black finish. Available in UHF or SMA cable configuration. **MR77 / MR77SMA HRO Price \$37.95**

2 m / 70 cm Mobile

NR-770HRKS HRO Price \$109.95

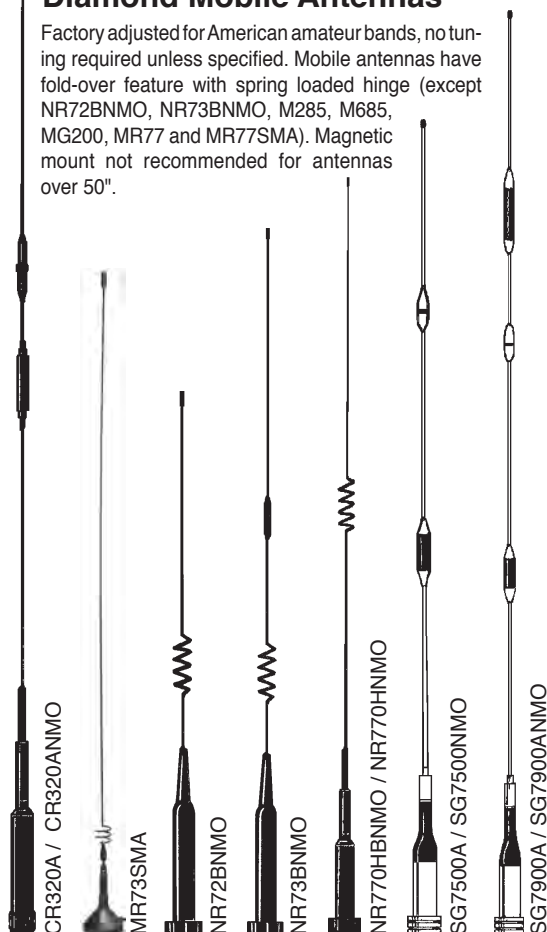
2 m / 70 cm Mobile

CR270A HRO Price \$42.95



Diamond Mobile Antennas

Factory adjusted for American amateur bands, no tuning required unless specified. Mobile antennas have fold-over feature with spring loaded hinge (except NR72BNMO, NR73BNMO, M285, M685, MG200, MR77 and MR77SMA). Magnetic mount not recommended for antennas over 50".



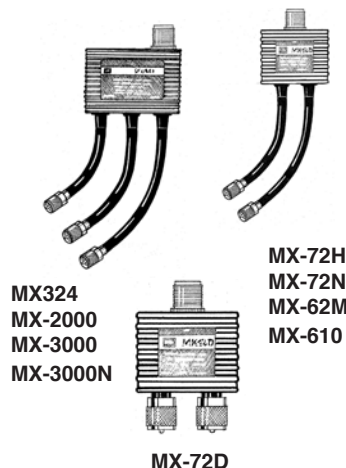
ANTENNAS & DUPLEXERS

Model	Bands	Gain/dB	Watts	Mount	Lth/in	HRO Price
AZ504SP	2m/70cm	2.15 dBi	50	UHF	15.5	\$39.95
AZ504FXH	2m/70cm	2.15 dBi	50	UHF	15.5	\$39.95
AZ507RSP	2m/70cm	2.15(2m) 4.9(70cm)	50	UHF	27.5	\$46.95
CR-270A	2 m/70 cm	2.15 dBi	50	UHF	17.3	\$42.95
CR-320A ^{2,4,8}	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100	UHF	36	\$79.95
CR320ANMO ^{2,4,8}	2 m/1 -1/4 m/70cm	2.1/3.8/5.5	100	NMO	36	\$79.95
CR-627B ^{2,4,8}	6m/2m/70cm	2.1/4.5/7.2	150	UHF	60	\$99.95
CR-627BNMO ^{2,4,8}	6m/2m/70cm	2.1/4.5/7.2	150	NMO	60	\$99.95
CR8900A ^{2,7(7M Only)}	10m/6m/2m/70cm	2.15(2m) 5.5(70cm)	60	UHF	50	\$99.95
D220 discone	100-1600 MHz	2	50	PL-259	35.5	\$109.95
MG200 ⁷	2.4 GHz	7	-	N	23.6	\$59.95
HF6FX ^{4,7}	6 m	2.15	250	UHF	44	\$69.95
HF50CX ^{4,7}	6 m	3.5	200	UHF	71	\$99.95
M285 ^{4,8}	2 m	3.4	200	UHF	52.4	\$31.95
M285SNMO ^{4,8}	2 m	3.4	200	NMO	52.4	\$31.95
MR73S Mag Mt	2m/70cm	2.15/3.4	10	SMA	20	\$26.95
MR73SJ Mag Mt	2m/70cm	2/3.4	10	SMA	20	\$26.95
MR75S Mag Mt	2 m/70 cm	2.15/3.4	35	SMA	20	\$36.95
MR75SJ Mag Mt	2 m/70 cm	2/2.4	35	SMA	20	\$36.95
MR77 ^{4,7}	2 m/70 cm	2.15/3.4	70	†	20	\$37.95
MR77SMA ^{4,7}	2m/70cm	2.15/3.4	70	&	20	\$37.95
MR77SJ Mag Mt	2m/70cm	2.15/3.4	70	SMA	20	\$37.95
M685S ^{4,7}	6 m	2.15	200	UHF	52.4	\$31.95
M685SNMO ^{4,7}	6 m	2.15 dBi	200	NMO	52.4	\$31.95
NR124	23 cm	8.4	100	Type N	25	\$49.95
NR124NMO	23 cm	8.4	100	NMO	25	\$54.95
NR140BNMO	220 MHz	4	159	NMO	36.2	\$46.95
NR22L ⁴	2 m	6.5	100	UHF	96.8	\$64.95
NR2000NA	2 m/70 cm/23 cm	3.15/6.3/9.7	100	N	39	\$84.95
NR-72BNMO ^{2,4,7}	2 m/70 cm	2.1/2.1	100	NMO	14	\$39.95
NR-73BNMO ²	2 m/70 cm	2.1/5.3	100	NMO	33	\$54.95
NR-770HA	2 m/70 cm	3.0/5.5	200	UHF	40	\$48.95
NR-770HNMO	2 m/70 cm	3.0/5.5	200	NMO	41	\$53.95
NR-770HB ²	2 m/70 cm	3.0/5.5	200	UHF	40	\$53.95
NR-770HBNMO ²	2 m/70 cm	3.0/5.5	200	NMO	41	\$53.95
NR-770HRKS ²	2 m/70 cm	3.0/5.5	200	UHF	40.2	\$109.95
NR-7900 ⁴	2 m/70 cm	3.7/6.4	300/250	UHF	57	\$84.95
SD330 screwdriver	3-30 MHz		200	UHF	73	\$389.95
SG7000A ^{4,7}	2 m/70 cm	2.1/3.8	100	UHF	18	\$69.95
SG7500A	2 m/70 cm	3.5/6.0	150	UHF	41	\$69.95
SG7500NMO	2 m/70 cm	3.5/6.0	150	NMO	42	\$72.95
SG7900A ⁴	2 m/70 cm	5.0/7.6	150	UHF	60	\$99.95
SG7900ANMO ⁴	2 m/70 cm	5.0/7.6	150	NMO	62	\$114.95

Diamond Duplexers and Triplexers

Model	Port	Freq MHz	CW Watts	PEP Watts	Loss dB	Isol. dB	MIX Conn.	Port Conn.	HRO Price
MX-37	LPF HPF	1.6 - 470 900 - 1300	400 50	400 50	.25 .45	45 45	N-Jack(F)	PL-259/12" cable N-Male /12" cable	\$59.95
MX62M	LPF HPF	1.6 - 56 76 - 470	200 200	200 200	.2 .2	50 50	SO-239	PL-259/12" cable PL-259/12" cable	\$69.95
MX-72D		Similar to MX-72H, but Direct Connection							\$46.95
MX-72H	LPF HPF	1.6-30 140-150 400-460	400 150 100	400 150 100	.1 .1 .2	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable	\$49.95
MX-72N		Similar to MX-72H, but type-N on UHF port							\$49.95
MX-72A		Similar to MX-72N, but type-N on MIX Conn.							\$54.95
MX-214	LPF HPF	140-150 220 - 225	300 200	300 200	.3 .4	40 40	SO-239	PL-259/12" cable PL-259/12" cable	\$65.95
MX-324	LPF BPF HPF	1.6-60 220-225 400-550	800 600 500	800 600 500	.3 .4 .4	40 40 40	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	\$89.95
MX-610	LPF HPF	1.3 - 30 49 - 470	600 500	600 500	.2 .25	45 45	SO-239	PL-259/12" cable PL-259/12" cable	\$69.95
MX-2000	LPF BPF HPF	1.6-60 110-170 300-950	800 800 500	800 800 500	.15 .20 .25	60 60 60	SO-239	PL-259/12" cable PL-259/12" cable PL-259/12" cable	\$83.95
MX-3000	LPF BPF HPF	1.6-160 350-500 850-1300	600 400 200	600 400 200	.15 .25 .30	55 55 55	N-Jack(F)	PL-259/12" cable PL-259/12" cable N-male/12" cable	\$79.95
MX-3000N		Similar to MX3000, but with Type-N male on BPF connection							\$85.95

- # Black anodized finish.
- † Mag mount with 13' RG58 cable w/UHF.
- & Mag Mt w/13' RG58 cable w/SMA.
- 4 Magnetic mounts not recommended. Vehicle ground required.
- 5 52-54 MHz only.
- 6 100 Watts on 1-1/4 m; 200 Watts on 2 m and 70 cm.
- 7 Gain Rated in dBi.
- 8 Tunable from 144-174 MHz.
- 9 Black with adhesive-backed mount.



ACCESSORIES & MOUNTS

Special Trunk Mount

for 3/8 x 24 thread antennas

K400-3/8C

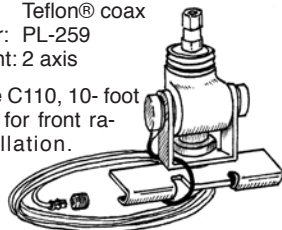
HRO Price \$73.95

Here's the ideal mounting system for Outbacker Perth, OB Jr., and other medium weight antennas. A spring is recommended for stiff or heavy antennas.

Power: 350 Watts RMS
Cable: 6 1/2' RG316
Teflon® coax
Connector: PL-259
Adjustment: 2 axis

Note: Use C110, 10-foot extension for front radio installation.

\$19.95



Diamond Accessories

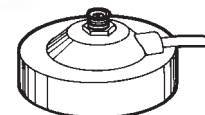
Model	Description	HRO Price
SP-1000	Lightning Protector DC-1000 MHz, Max Power 400 W PEP, SO-239, VSWR <1.2	\$29.95
SP-1000PW	Lightning Protector DC-1000 MHz, Max Power 400 W PEP, SO-239(F), SO-239(M), VSWR <1.2	\$34.95
SP-3000P	Lightning Protector DC-3000 MHz, Max Power 400 W PEP, Type-N(F), Type-N(M), VSWR <1.2 Waterproof	\$41.95
SP-3000W	Lightning Protector DC-3000 MHz, Max Power 200 W PEP, Type-N, VSWR <1.2 Waterproof	\$41.95
MGC-50	Window feedthru assembly, HF-50 MHz 50 W, 2 m 40 W, 440 MHz 30 W, 1200 Hz 10 W, SO-239	\$53.95
CX-210A	Heavy duty wideband coax switch, DC-1000 MHz, 1.5 kW, UHF(F) to UHF(M) Waterproof	\$49.95
CX-210N	Heavy duty wideband coax switch, DC-1500 MHz, 1.5 kW, N connector.	\$79.95
CX-310A	Heavy duty 3 position coax switch, wideband, DC-800 MHz, SO-239 connectors.	\$89.95
DL-30A	Dummy load, DC-500 MHz, 15 W RMS (max)/100 W peak, PL-259 connector.	\$39.95
DL-30N	Dummy load, DC-1500 MHz, 15 W RMS (max)/100 W peak, Type N connector.	\$54.95
D38-24	UHF to 3/8-24 Adapter	\$19.95
SS-770R	Phasing Harness, 114 MHz, 430 MHz, Input SO-239, Output x2 PL-259	\$74.95

Mobile Mounts

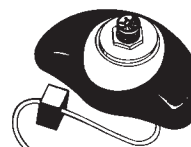
Model	Description	HRO Price
C101	UHF base 6.5' RG316 Teflon coax w/PL259	\$37.95
C101NMO	NMO base 6.5' RG316 Teflon coax w/PL259	\$37.95
C101-3/8C	Replacement cable only for K400-3/8C	\$34.95
C101-3/8C Kit	Replacement cable and hardware for K400-3/8C	\$44.95
C104SMA	4' RG58/U Extension cable for PL-259, 90 degree SMA Male & SO-239	\$16.95
C105SMA	5' RG58/U Extension cable for C101/C101NMO, 90 degree SMA Male	\$16.95
C110BNC	10' RG316 extension cable for C101/C101NMO. Use front radio installations. BNC male	\$29.95
C110SMA	10' RG316 extension cable for C101/C101NMO. Use front radio installations. SMA male	\$29.95
C110	10' mini-8/RG8X extension cable for C101/C101NMO. Use front radio installations.	\$19.95
C211	Combination of C101 and C110. 16.5 feet cable assembly	\$49.95
C213S	UHF base, 13.5' RG316 Teflon Coax with PL-259	\$44.95
C213SNMO	NMO base, 13.5' RG316 Teflon Coax with PL-259	\$45.95
CRM	Stainless steel right angle mount with U-bolt	\$16.95
DPK-4NM-N	Type N Magnet, 13' 5mm coax w/Type-N plug. Good to 1300 MHz.	\$54.95
HRKS	Adhesive backed UHF mount, 13.5' RG316 teflon coax with SMA and PL-259 adapter	\$69.95
K400-3/8C *	Special mount for 3/8x24 thread Antenna. 6.5 feet RG316 w/PL-259	\$73.95
K400C *	Deluxe mount with UHF type base. 6.5 feet RG-316 Teflon coax w/PL-259	\$73.95
K400CNMO *	Deluxe mount with NMO type base. 6.5 feet RG316 Teflon coax w/PL-259	\$73.95
K400S	Deluxe mount with UHF type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$79.95
K400SNMO	Deluxe mount with NMO type base. 13.5 feet RG316 w/SMA (PL259 adapter included)	\$79.95
K412C	Trunk/hatchback mount. UHF base, 6.5'Teflon coax w/PL-259. 45" max ant	\$59.95
K412CNMO	Trunk/hatchback mount. NMO base, 6.5'Teflon coax w/PL-259. 45" max ant	\$59.95
K412S	Trunk / hatchback mt. UHF base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	\$69.95
K412SNMO	Trunk / hatchback mt. NMO base, 13.5' RG316 coax w/SMA. (PL259 adapter included)	\$69.95
K515S	Deluxe luggage carrier mt. UHF base.13.5 feet RG316 w/SMA(PL259 adapter included)	\$69.95
K515SNMO	Deluxe luggage carrier mt. NMO base.13.5 feet RG316 w/SMA (PL259 adapter included)	\$69.95
K540KM	Deluxe Mirror/Luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	\$59.95
K550KM	Deluxe mini van luggage rack mount. Black, adjustable. 13' RG58C/U w PL259	\$69.95
K550L	Oversize version of K550	\$46.95
K600M	Tilt angle (0-9 degrees) trunk mount. Black. RG-188 and low loss 7 mm cable.	\$59.95
K600S	Tilt angle (0-9 degrees) trunk mt UHF base. 13.5 feet RG316 w/SMA (PL259 adapter inc.)	\$62.95
K702M	Deluxe low-profile magnet/suction mount. 6.5" diameter, 13' RG58 & PL-259	\$49.95
K9000LRM	Motorized mount for luggage rack. Use C-series cable assemblies	\$104.95
K9000LRMO	Same with oversize K515 hardware	\$109.95
K9000TM	Motorized mount for trunk lid. Use C-series cable assemblies	\$104.95
SPM35	UHF type base on heavy 1.5 lb/4" magnetic, 13' 5mm coax with PL-259.	\$44.95
SPMNMO	NMO type base on heavy 1.5 lb/4" magnet, 13' 5mm coax with PL-259	\$49.95



K702M



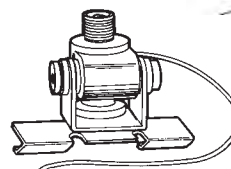
SPM35
SPMNMO
DPK4NM-N



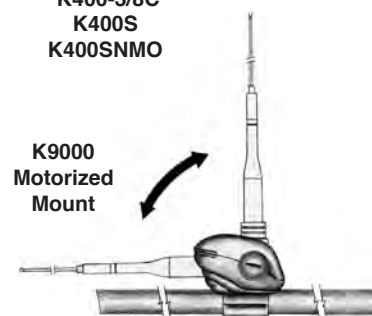
K600M
K600S



K412CNMO
K412SNMO
K412C
K412S



K400C
K400CNMO
K400-3/8C
K400S
K400SNMO



K9000
Motorized
Mount

9. Use C110 for front radio installations

HF / HT ANTENNAS

BALUNS & ROTATORS

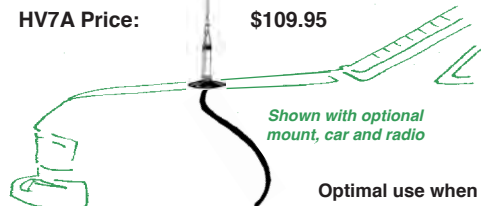
DIAMOND
ANTENNA

HV7A Mobile Antenna System For New HF / VHF Transceivers (such as: IC706, IC7000, FT100, FT857, FT897 and the FT8900R)

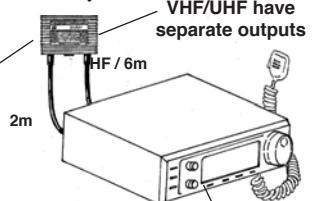
The HV7A has 5 band capability: 70 cm, 2 m, 6 m and 2 HF bands through use of loading coils. Fold-over feature allows for easy access into low overhead buildings.

Bands Supplied: 10 m / 6 m / 2 m / 70 cm
Opt. Loading Coils: 40 m / 20 m / 17 m / 15 m
Power, P.E.P.: HF 120 W / VHF 200 W
Mount Connection: UHF
Length: 54" (HV7A)
SWR: 1.5:1 nominal

HV7A Price: \$109.95



**MX62M
Duplexer
\$69.95**



Specifications:

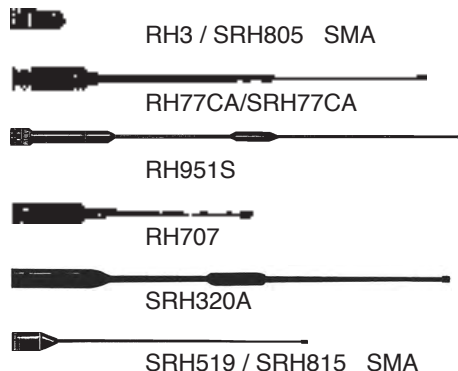
- HF / 6 m, 2 m, 70 cm duplexer.
- 1.6-56 MHz LPF
- 76-470 MHz HPF
- (76-120 receive only)
- Watts: 600 P.E.P.
- Loss: .2 dB LPF
.3 dB HPF
- Isolation: 50 dB

Use with HF / VHF mobile transceivers such as the IC-706 series, FT-100 or combine 2 m and HF rigs.

Optional Loading Coils

HVC14	20 m	\$37.95
HVC18	17 m	\$37.95
HVC21	15 m	\$37.95

Antennas for Handhelds



Baluns

RadioWavz

The RadioWavz baluns are designed to handle full legal power with a low standing wave ratio (SWR).

B11A 1/1	\$24.95
B14VA 4/1	\$25.95
B16C1 6:1 - current isolation	\$39.95
B19TX 9:1 - isolation xfmr	\$39.95



Unadilla

W2AU



The Unadilla W2AU 1:1 balun is designed to handle full 2000 Watts power. It matches 50-75 ohms coax to 50-75 ohms balanced. It has 1 to 1 impedance ratio and covers 1.8 to 40 MHz. Beam versions are available with pigtailed to connect to driven elements.

HRO Prices

W2AU 1/1	\$29.95
W2AU 4/1	\$29.95
W2AU 1/1 - Beam Version	\$30.95
W2AU 4/1 - Beam Version	\$30.95



W2DU HF

The W2DU Maxi-Baluns owe their extremely high power capability to the fact that they contain no ferrite cores to saturate. Even at

high SWR levels, the W2DU baluns won't generate harmonic radiation. The internal feed line passes through ferrite beads which prevent RF current from flowing on the coax shield. Also available for VHF frequencies. **HRO Price \$31.95**

LDG
ELECTRONICS



**200 Watts
1.8 to 30MHz**

HRO Prices

RBA-4:1 Remote 4:1 Balun	\$30.95
RBA-1:1 Remote 1:1 Balun	\$29.95
RU-4:1 Remote 4:1 UNUN	\$29.95

hy-gain

Hy-gain rotators are the first choice of hams around the world! One is perfect for your antenna configuration.

Ham - IV

The popular Ham-IV is designed for medium antenna arrays up to 15 square feet. It features a dual 98 ball bearing race for load bearing strengths and an electric locking steel wedge brake. Maximum mast size 2 1/16". **HRO Price \$599.95**



Tailtwister Series II

This unit handles medium communications arrays up to 20 square feet wind load area. Available with the DCU-1 Pathfinder digital control box or standard analog control box. Has 138 ball bearings for large load bearing strength. Maximum mast size 2 1/16".

HRO Prices:

T2X \$699.95, T2XD \$1229.95

Ham - V

For medium antenna arrays up to 15 square feet wind load. Includes the DCU-1 Pathfinder digital control unit. No more terminal strips. Features cinch connector plus 8-pin plug at the control box. Maximum mast size 2 1/16". **HRO Price \$949.95**

HDR-300A

Choose this rotator for king-sized antenna arrays up to 25 square feet of wind load. Heavy-duty self-centering steel mast clamp and hardware. Digital display accurate to 1 degree. **HRO Price \$1369.95**

AR-40

Especially for large FM-TV and compact communication antenna arrays up to 3.0 square feet wind load area. Dual 12 ball bearing race. Automatic position sensor never needs resetting. Maximum mast size 2 1/16". Includes MSLD light duty lower mast support. **HRO Price \$319.95**

CD-45II

The CD-45II handles up to 8.5 square feet of antenna wind load when mounted inside the tower or 5 square feet with the included MSLD light duty lower mast adapter. Has 58 ball bearing race. Maximum mast size 2 1/16". **HRO Price \$429.95**

DCU-1 Pathfinder

A digital control unit for the T2X, Ham-IV and Ham -V rotators. **HRO Price \$749.95**



The radio

Yaesu's high quality rotators for amateurs include models for medium to large arrays and for satellite work. There are also provisions for computer control. Contact your nearest HRO for more specifications and discount prices on Yaesu products.



G-2800DXA

The G-2800DXA is a high-technology rotator designed to turn the largest tower-mounted antenna arrays.

G-800SA / G-800DXA

The G-800 rotator series is designed for medium to heavy loads and antennas up to 20 square feet. The G-800DXA is the same as the G-800SA with the addition of presets.



Rotator Computer Controller GS-232B

The GS-232G rotator computer interface provides digital control of Yaesu rotators G-800DXA, G-1000DXA, G-2800DXA, and G-5500.

The GS-232B contains its own PIC18C452 micro-processor with ROM and RAM and 10-bit analog-to-digital converter. The 3 wire async serial line can be configured for serial data rates from 1200 to 9600 baud. The unit has a DB-9 male connector for connection to the RS232C COM port of your computer.

Supplied items include: control cable for the azimuth rotator (5 in to mini DIN), control cable for the Az/EI rotator (dual 5 pin to DIN cable), DC power cable, and hook and loop fasteners. This device requires 12 VDC at 110 mA.

G-1000DXA

The G-1000DXA is designed to handle bigger arrays up to 22 square feet. A great value.

G-450A

The G-450A is ideal for smaller HF and VHF/UHF antennas. Features 360 degree radial compass display with overlap.



HRO
Price
\$CALL

G-5500

This is the most popular azimuth and elevation rotator for

satellite, moon-bounce or other space communications work. It provides horizontal and vertical antenna rotation in a single unit. The control box has two large meters, one showing elevation and the other azimuth. Meter aiming accuracy is within $\pm 4\%$. The G-5500 provides 180° elevation rotation with a rotation time of 67 seconds. A 360° azimuth rotation takes just 50 seconds. This rotator accepts up to a 2.5" mast, a maximum 1-5/8" horizontal cross-boom and 440 pounds of vertical load. Computer controllable with optional GS-232 computer interface. **HRO Price \$CALL**

G-550

This is an elevation rotator for satellite work. The control box shows elevation in degrees. **HRO Price \$CALL**

Rotator Separation Kit

For some applications it is desirable to separate the azimuth from the elevation rotator on the tower. This separation kit provides all the hardware for the rotator to implement this separation. **HRO Price \$CALL**

ROTATORS

M²



Orion Rotator OR-2800PX

The Orion OR-2800PX is engineered for long life, reliability and performance while turning large antennas or systems. It has a strong ductile iron mast clamp to support up to 3-1/8" masts (optional long bolts required), extended and hardened drive shaft, and prop-pitch style torque plate. The rotator housing fits inside most popular towers and mates to standard tower / rotator plates.

The RC-2800PX Control Box has digital readout, variable speed control, slow start, and reverse delay, programmability, preset, 2 rotator capacity, coast-down, true AZ readout-continuous and infinite limit position control. The USA-made OR-2800PX has a one year warranty. **HRO Price \$CALL**

Wind Area Capacity 35 sq. ft.
Starting Torque 4200 in. lbs.
Rotating Torque 3200 in. lbs.
Breaking Torque 17000 in. lbs
Vert. Load Capacity 1800 lbs.
Mast Size (O.D.) 1.75-3-1/8"
Rotation Speed (360) 55-120 sec.
Readout Accuracy 1 degree
Input Voltage 110/220 AC
..... 50/60 Hz
Motor Voltage 28-42 VDC
Cable Type 8 conductor
Weight (Rotator unit) 42 lbs.

Rotator Specifications

	Model	Input Voltage	Motor Voltage	Rotation Time	Stationary Torque	Rotation Torque	Maximum Windload	Max. Vert Load	Max. Mast Size	Cable Type	Weight lbs (kg)	HRO Price
M2	OR-2800PX	110/220 VAC	28 VDC	55 sec	17,000 in lbs	3200 in lbs	35 sq ft	1800 lbs	3-1/8 in	8-wire	42 (19)	CALL
Yaesu	G-450A	110 VAC	24 VDC	51 sec	217 ft lbs	39.8 ft lbs	10 sq ft	242 lbs	2 in	5-wire	7 (3.2)	CALL
	G-800SA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	CALL
	G-800DXA	110 VAC	24 VDC	55 sec	3456 in lbs	43-79 ft lbs	17 sq ft	440 lbs	2.5 in	6-wire	10 (4.5)	CALL
	G-1000DXA	110 VAC	24 VDC	55 sec	5200 in lbs	79 ft lbs	22 sq ft	440 lbs	2.5 in	6-wire	15 (6.8)	CALL
	G-2800DXA	110 VAC	24 VDC	55 sec	20,832 in lbs	219 ft lbs	34 sq ft	880 lbs	2.5 in	6-wire	26 (11.8)	CALL
	G-5500	110 VAC	24 VDC	58 sec	289 ft-lbs	"	10.7 sq ft	440 lbs	2.5 in	6-wire	20 (9)	CALL
	G-550	110 VAC	24 VDC	67 sec	289 ft-lbs	101 ft-lbs	10.7 sz ft	440 lbs	1-5/8 in	6-wire	7.9 (3.6)	CALL

* Elevation 101 ft-lbs, Azimuth 44 ft-lbs



CRANK-UP TUBULAR

MA-SERIES CRANK-UP MASTS

The premier MA-series crank-up Tubular Towers are designed to be both safe and neighbor friendly. The slender design gives a clean, flagpole-like appearance and is rated at 90 mph winds per the IBC 2006 code. Per TIA/EIA specifications, adequate safety margins are included. International Building Code calculations are available for most models.

The MA-40 and 550 models come standard with flat base, two 1/2" x 10" anchor bolts, wall bracket and rotator plate mounted on top of top section. No guying is required when tower is properly bracketed to the eave of your roof.

MA-series towers are completely self-supporting only when used with accessory MARB or MAB series bases. The MARB series rotator base allows the entire tower and antenna to be rotated from the base (rotator not included). This provides for easy rotator maintenance plus emergency hand rotation of the entire tower and antenna.

The MA-550MDP, 770MDP and 850MDP models include a heavy duty motor drive with positive pull down. The MDP models provide motorized raising and lowering of the tower. A remote control unit (RMC-1000) accessory is available that allows raising and lowering from your ham shack or other remote location.

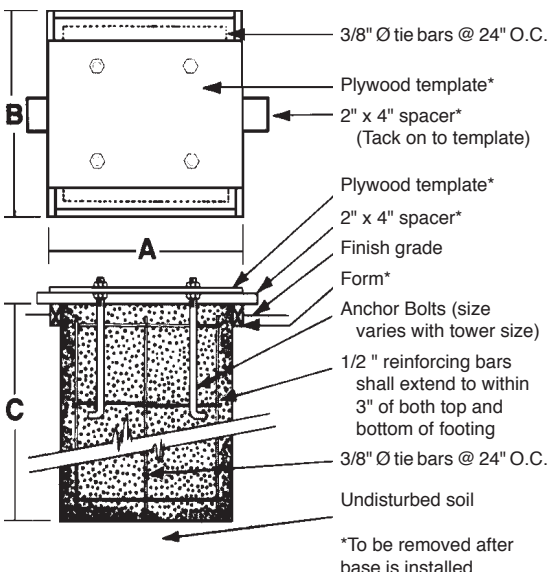
All models without motor drives come standard with manual hand winches which have load actuated brakes for maximum safety. This feature prevents the winch from free-wheeling and causing injury to you or your installation in the event that you lose your grip during raising or lowering.

All steel used at US Tower conforms to ASTM specifications. All welding is done by certified factory personnel. All of our towers are factory tested by trained personnel before leaving the plant.

Model Number	Height Maximum	Height Minimum	Sections	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
MA-40	40'	21'6"	2	242	3" sq.	4.5"	CALL
MA-550	55'	22'1"	3	435	3" sq.	6.625"	CALL
MA-550MDP*	55'	22'1"	3	620	3" sq.	6.625"	CALL
MA-770	75'	22'10"	4	645	3" sq.	8.0"	CALL
MA-770MDP*	75'	22'10"	4	830	3" sq.	8.0"	CALL
MA-850MDP*	90'	23'6"	5	1128	3" sq.	10.0"	CALL
All Towers will handle 10 sq. ft antenna at 50 MPH winds.							

* These towers also requires purchase of MCL-100 or RMC-1000

MA-SERIES BASE INFORMATION

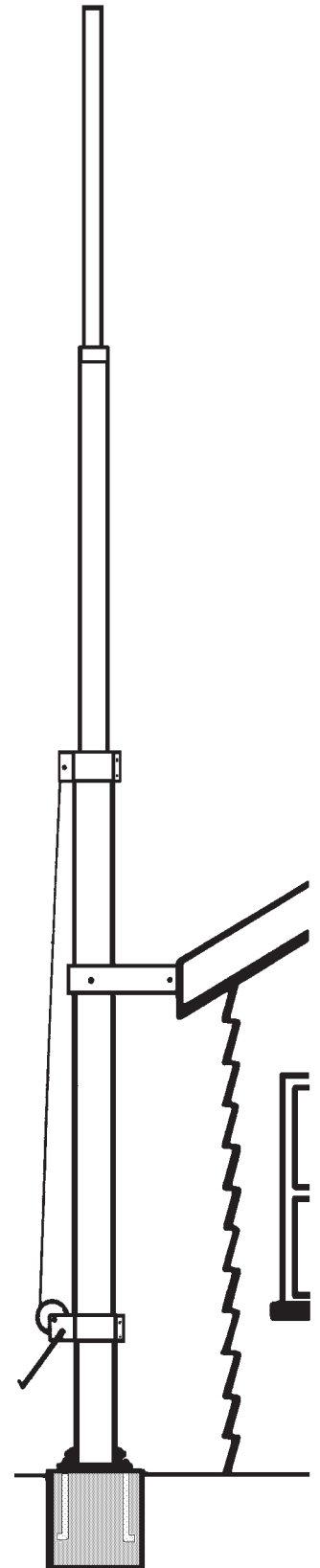


- Base dimensions may vary with different soil compositions.
- Allow ample time for the concrete to cure.
- MAB and MARB dimensions are the same.
- Contact US Tower for correct base information.

Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.

Rebar is not provided by US Tower. MA-40 & 550 use their standard bases as a template. These standard bases use only 2 bolts. Wooden template included with MAB & MARB bases.

Because of wide variations throughout the country in zoning requirements and loading conditions (snow, wind, ice, etc.), it is the responsibility of the customer to make certain that his Tower conforms to all applicable codes. We recommend you obtain all necessary permits prior to purchase .



The factory reserves the right to make changes or modifications without notice.

MA-SERIES ACCESSORIES

Model	Description	Weight
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MAF Raising Fixture

MAF-Series Raising Fixture accessory for easy raising and antenna servicing. For use with MARB and MAB bases.

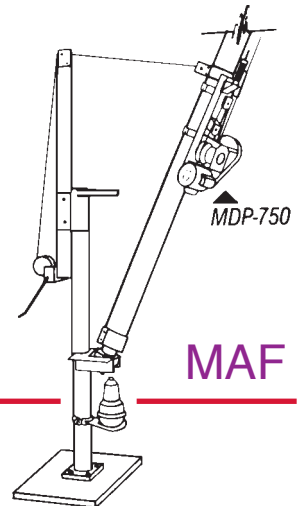
MAF-40	Raising fixture for MA-40	35#
MAF-550	Raising fixture for MA-550	70#
MAF-770	Raising fixture for MA-770	75#
MAF-850	Raising fixture for MA-850	80#

The Customer is Responsible

for obtaining all local city or county building and tower permits

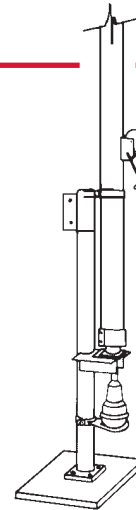
AND

for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.



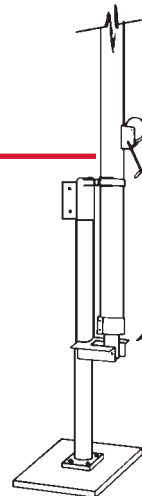
MARB Freestanding Rotator Base

MARB-40	Freestanding rotator base for MA-40 with four 3/4" x 27" anchor bolts and thrust bearing	35#
MARB-550	Freestanding rotator base for MA-550 with four 1" x 36" anchor bolts and thrust bearing	140#
MARB-770	Freestanding rotator base for MA-770 with four 1" x 36" anchor bolts and thrust bearing	195#
MARB-850	Freestanding rotator base for MA-850 with four 1-1/8" x 36" anchor bolts and thrust bearing	280#



MAB Freestanding Type Base

MAB-40	Freestanding hinged base for MA-40 with four 3/4" x 27" anchor bolts	55#
MAB-550	Freestanding hinged base for MA-550 with four 1" x 36" anchor bolts	119#
MAB-770	Freestanding hinged base for MA-770 with four 1" x 36" anchor bolts	175#
MAB-850	Freestanding hinged base for MA-850 with four 1-1/8" x 36" anchor bolts	180#



Hinging allows for easy installation on both MAB and MARB bases.

Coax Standoff Arms

CX-2M	Coax standoff arms for MA-40	4#
CX-3M	Coax standoff arms for MA-550	6#
CX-4M	Coax standoff arms for MA-770	8#
CX-5M	Coax standoff arms for MA-850	10#
IV-16	The IV-16 slips over the top of the mast and rests at the top of the tower to hold inverted vee antennas. The IV-16 cannot be used with the MARB rotator base.	5#

Model	Description	Weight
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Motor Drives

MD-75	Heavy-duty motor drive with 1 HP motor and gear box.	155#
MDP-750	Heavy-duty motor drive with 1 HP motor, gear box, and positive pull down.	185#

Remote Control Accessories

RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location.	18#
MCL-100	Limit switch control package includes limit switches, limit switch brackets, and control box at the base of the tower.	7#

**Call Toll-Free for Discounts on
U.S. Towers and Accessories**



TMM SERIES

US Tower's latest design includes the compact TMM series towers giving Hams in restricted areas an alternative.

The TMM series has a minimum retracted height of 11'4" (may vary, depending on rotator used) and a maximum height of 47' including mast. At the tower's retracted height, visual impact is reduced to a minimum and antenna servicing is made easier. Typically the tower and antenna are below the roof line of your home when the tower is fully retracted.

The TMM series towers are lightweight, freestanding crank-up towers that allow up to 20.7 square feet of antenna in 90 mph winds per TIA/EIA specifications. The TMM-433HD allows 31.8 square feet in 90 mph winds. These lightweight towers should provide many years of trouble free service.

TX SERIES

US Tower's freestanding TX series crank-up towers are as strong or stronger than most competitors' heavy-duty models. The TX series towers have 21 foot sections with 4 foot overlap to provide extra height and strength. In addition, the overlap helps prevent binding while lowering your tower in high wind conditions.

The TX series towers have a large enough top section (12 1/2") to permit installation of most rotators inside the section for maximum strength while allowing the section to fully retract. Cross bracing at critical points on the tower ensures safety and additional strength. All US Tower crank-up towers have a heavy-duty, hot dipped galvanized finish both inside and out, which should provide many years of trouble free service.

The TX series towers come complete with rotator plate and base hardware which includes large steel anchor bolts and heavy-duty steel T-base that

allows the tower to hinge on for easy installation. All T-bases will accept the TRX series raising fixtures for easy one-man installation. All TX series towers include Fulton hand winches (except MDP and MDPL models) which feature automatic load actuated brakes for maximum safety. Masts and motor drives are available as accessories (see accessory page).

The TMM-433SS and 541SS have a 10" top section which will permit the installation of the Yaesu G800 rotator inside the top section. Oversized rotators will prevent full retraction of your tower; however, they may be used if full retraction is not required. This restriction is dependent upon location of rotator plate. All TMM Series towers include anchor bolts, rotator plate, hinged T-base, load actuated winch, and eight feet of 2" OD x 120" antenna mast.

The TMM-433SS, -433HD and -541SS will accept the MD-75 or MDP-750 motor drive accessories. The MDP-750 motor drive accessory is compatible with both of our MCL-100 and RMC-1000 limit switch packages (see accessories).

The TX-472MDP comes complete with MDP-750 motor drive with positive pull-down feature. The TX-489MDPL includes the MDPL-1000 motor drive and level wind feature. Limit switch assemblies and remote raising devices are available (MCL-100) (RMC-1000) for all MDP-750 and MDPL-1000 motor drive units (see accessory page for description).

US Tower's TX series requires no guying. The wind loading is calculated at 90 mph winds per TIA/EIA specifications. To assist you in applying for necessary construction permits, IBC 2006 calculations are available for most models.

HDX SERIES

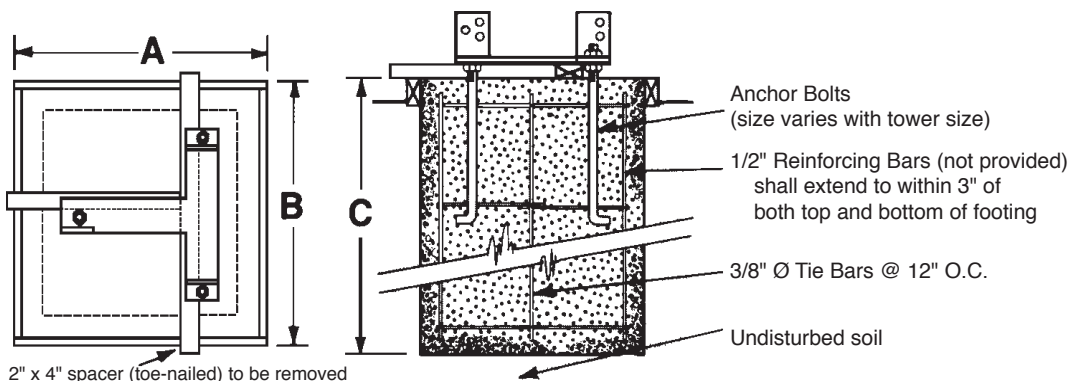
US Tower's HDX series heavy-duty crank-up towers have up to 2 1/2 times more windloading capacity than others commonly advertised. This superior strength allows for large stacked arrays, while using our commercial type bases and anchor bolts that can be easily installed and vertically adjusted. All HDX series T-bases are designed to use our TRX series raising fixtures to make installations and antenna servicing a one man job.

Modified top sections for the HDR-300 rotators are available at a small additional cost. US Tower carries as accessories many different sizes and strengths of masts which can be used with the HDX series towers. The HDX-572MDPL and 589MDPL motorized towers provide dual level wind, positive pull down and heavy duty gear box features. The HDX-572MDPL comes complete with the MCL-100 limit switch package included. All towers

using MDP-750 and MDPL-1000 motor drives may use the RMC-1000 accessory limit switch package which allows the raising and lowering of your tower from the comfort of your ham shack or any remote location. MCL-100 is also available (see accessory page).

All HDX series towers come complete with rotator plate, anchor bolts, and heavy-duty T-base (doubles as template). US Tower's special T-base design allows the tower to hinge for easy installation. US Tower's crank towers require no guying. The HDX Series towers are rated at 90 mph winds per TIA/EIA specifications. To assist you in getting a construction permit, IBC 2006 calculations are available for most towers.

CRANK-UP TOWER BASE INFORMATION



Tower base hole size and rebar are for illustration only, current UBC engineering calculations should be used to determine your specific installation.

Contact US Tower for correct base information.

SELF-SUPPORTING CRANK-UP TOWERS

Tower Specifications

COMPACT TMM-SERIES CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TMM-433SS	33' w/o Mast	11'4"	4	315	10"	18"	CALL
TMM-433HD	33' w/o Mast	11'4"	4	400	12.5"	20 7/8"	CALL
TMM-541SS	41' w/o Mast	12'	5	430	10"	20 7/8"	CALL

Towers handle 18 sq. ft. antenna at 50 MPH winds. TMM-433HD handles 24 sq. ft.

TX-SERIES FREE-STANDING CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
TX-438	38'	21'6"	2	355	12.5"	15"	CALL
TX-455	55'	21'	3	670	12.5"	18"	CALL
TX-472	72'	22'8"	4	1040	12.5"	21 5/8"	CALL
TX-472MDP*	72'	22'8"	4	1210	12.5"	21 5/8"	CALL
TX-489MDPL	89'	23'4"	5	1800	12.5"	25 5/8"	CALL

All Towers will handle 18 sq. ft. antenna at 50 MPH winds.

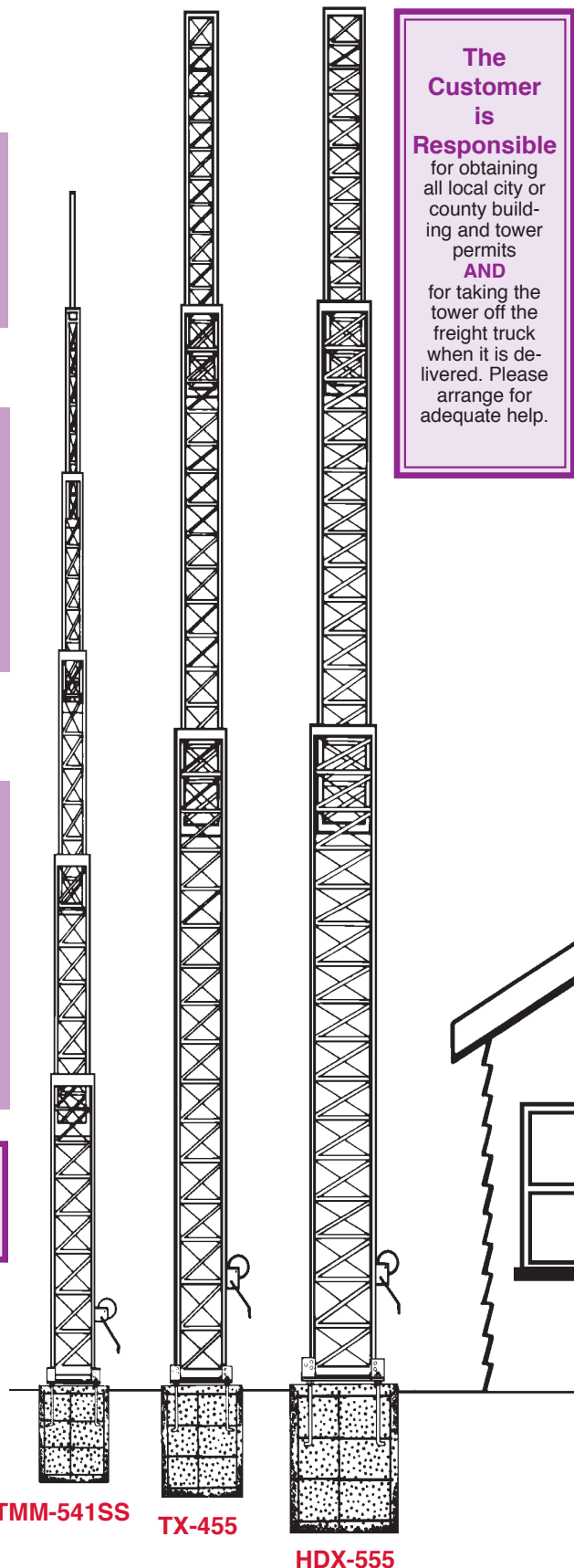
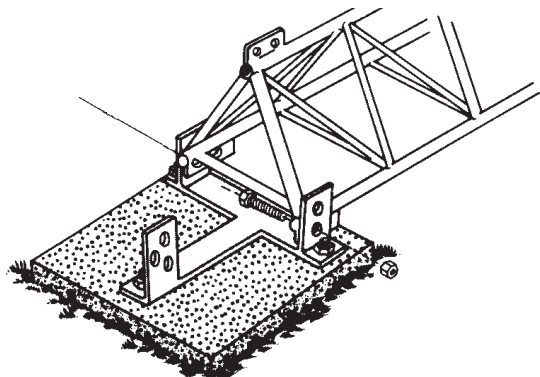
* This tower requires purchase of MCL-100 or RMC-1000

HDX-SERIES HEAVY-DUTY CRANK-UP TOWERS

Model Number	Height Maximum	Height Minimum	Sec-tions	Weight Pounds	Sec O.D. Top	Sec O.D. Bottom	HRO Price
HDX-538	38'	21'6"	2	600	15"	18"	CALL
HDX-555	55'	22'	3	870	15"	21 5/8"	CALL
HDX-572MDPL	72'	22'8"	4	1600	15"	25 5/8"	CALL
HDX-589MDPL	89'	23'8"	5	2440	15"	30 5/8"	CALL
HDX-689MDPL	89'	23'8"	5	3450	18"	37 1/8"	CALL
HDX-5106MDPL	106'	24'8"	6	3700	15"	37 1/8"	CALL

All Towers will handle 30 sq. ft. antenna at 50 MPH winds.
HDX-689MDPL rated at 60 sq. ft. of antenna at 50 mph winds.
HDX-5106MDPL rated at 35 sq. ft. of antenna at 50 mph winds.

Call Toll-Free for Discounts on
U.S. Towers and Accessories



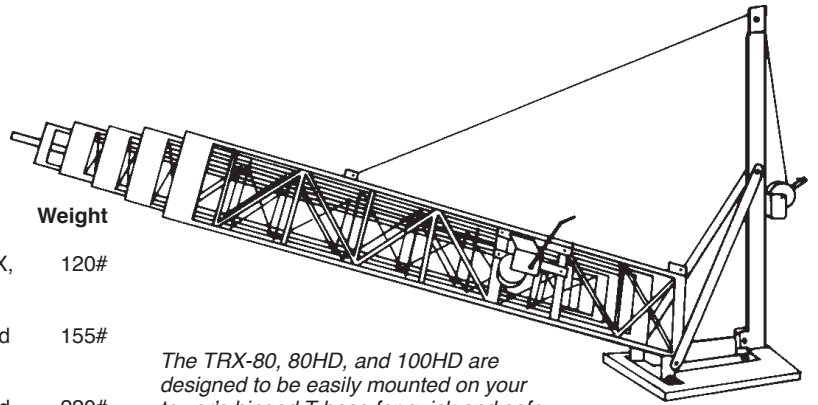
The Customer is Responsible
for obtaining all local city or county building and tower permits
AND
for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

The factory reserves the right to make changes or modifications without notice.



Raising Fixture

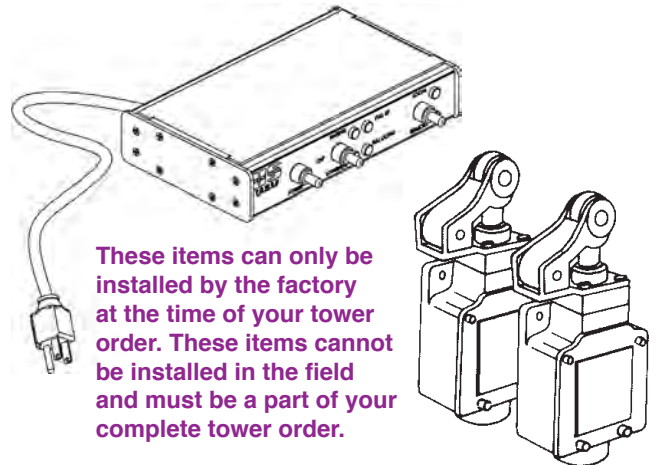
Model	Description	Weight
TRX-80	Standard model tower raising fixture for TMM, TX, and HDX series towers.	120#
TRX-80HD	Heavy-duty model tower raising fixture for TX and HDX series towers.	155#
TRX-100HD	Heavy-duty model tower raising fixture for TX and HDX series towers.	220#



The TRX-80, 80HD, and 100HD are designed to be easily mounted on your tower's hinged T-base for quick and safe one-man installation or antenna servicing.

Remote Control

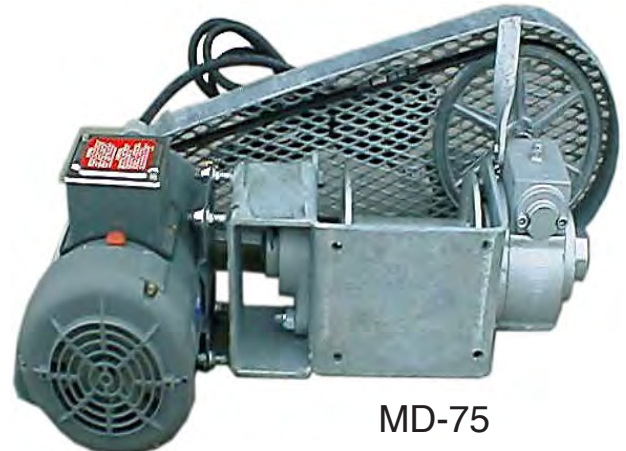
Model	Description	Weight
RMC-1000	Relay operated remote control for raising and lowering your tower from your ham shack or other remote location. The RMC-1000 includes limit switches, limit switch brackets, and two relay boxes. The RMC-1000 can only be used with the MDP-750 and MDPL-1000 motor drives.	18#
MCL-100	Limit switch control package. The MCL-100 includes limit switches, limit switch brackets and control box at the base of the tower. The MCL-100 allows you to raise and lower your tower with automatic shut down when maximum or minimum height is reached. The MCL-100 can only be used with the MDP-750 and MDLP-1000 motor drives.	7#



These items can only be installed by the factory at the time of your tower order. These items cannot be installed in the field and must be a part of your complete tower order.

Motor Drives

Model	Description	Weight
MD-75	Heavy-duty motor drive with 1 HP motor and 1 gear box.	55#
MDP-750	Heavy-duty motor drive with 1 HP motor, gear box and positive pull down. US Tower's positive pull down feature is designed to mechanically apply the same strength in the retraction process as is used in the raising of your tower. Positive pull down is very important in lowering your tower in high wind conditions. The MDP-750 differs from the standard motor drive unit (MD-75) which releases tension on the cables allowing the weight of the upper sections to be the only lowering force.	185#
MDPL-1000	Heavy-duty motor drive with 1 HP motor, heavy-duty gear box, positive pull down and dual level wind features. Dual level wind is an exclusive US Tower design allowing the cable to wind on the motor drum in a uniform manner. This prevents the cable from overlapping on the drum.	220#



MD-75

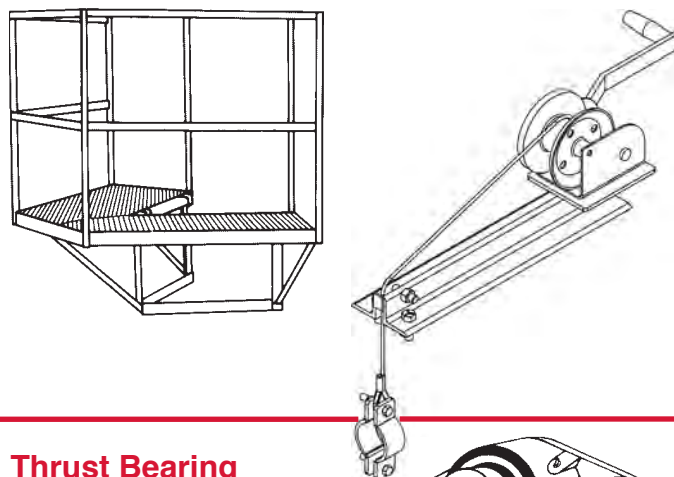
Call factory for replacement 1 HP motors, hand winches, limit switches, 3/16" x 7" x 19" and 1/4" x 7" x 19" aircraft cable, anchor bolts, belts, pulleys, sprockets, and modified bases. Tower dolly rentals are available. The factory reserves the right to make changes or modifications without notice.

The Customer is Responsible

for obtaining all local city or county building and tower permits **AND** for taking the tower off the freight truck when it is delivered. Please arrange for adequate help.

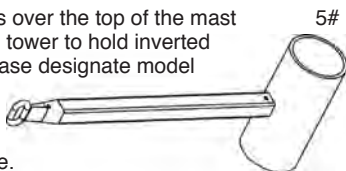
CRANK-UP ACCESSORIES

Model	Description	Weight
Service Platform		
HDP	Large service platform with safety railings to provide a safe and comfortable surface while installing or maintaining your antenna and rotator.	125#

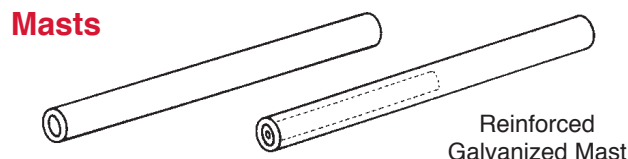
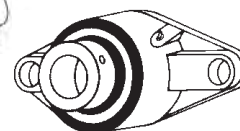


Mast Raising Fixture		
MRF	Mast raising fixture with winch and cable that attaches to the top of your tower to assist in raising and lowering your antenna mast.	20#

Coaxial Arm Sets		
IV-16	The IV-16 attaches over the top of the mast near the top of the tower to hold inverted vee antennas. Please designate model tower to be used. Cannot be used with MARB rotator base.	5#
CX-2	Set of 2 coax standoff arms	6#
CX-3	Set of 3 coax standoff arms	8#
CX-4	Set of 4 coax standoff arms	10#
CX-5	Set of 5 coax standoff arms	13#
CX-6	Set of 6 coax standoff arms	15#



Thrust Bearing		
TB-2US	Thrust Bearing for 2" mast, 2 flange holes	10#



US Tower offers three different types of masts. The M-5, 10, 15 and 20 masts have .120" wall thickness. The M-15R and 20R have steel pipe inserts in the lower half of the mast which provides extra strength where most needed without adding unnecessary weight in the top portion. The M-15R and 20R have a wall thickness of .250". The CM-20 has a wall thickness of .375".

Model	Description	Weight
M-5	2" O.D. x 5 foot galvanized mast	14#
M-10	2" O.D. x 10 foot galvanized mast	25#
M-15	2" O.D. x 15 foot galvanized mast	40#
M-15R	2" O.D. x 15 foot reinforced galvanized mast	50#
M-20	2" O.D. x 20 foot galvanized mast	55#
M-20R	2" O.D. x 20 foot reinforced galvanized mast	70#
CM-20	2" O.D. x 20 foot chromolly mast	140#

3/4" x 27"	Anchor bolt with 2 nuts	5#
1" x 27"	Anchor bolt with 2 nuts	10#
1-1/8" x 27"	Anchor bolt with 2 nuts	12#
RP-3	Rotator plate for 10" section	5#
RP-4	Rotator plate for 12.5" section	7#
RP-5	Rotator plate for 15" section	9#

Tower Accessories

	TX438	TX455	TX472	TX472MDP	TX489MDPL	HDX-538	HDX-555	HDX-572MDPL	HDX-589MDPL	TMM-433SS	TMM-433HD	TMM-541SS
Masts												
M-5	O	O	O	O	O	O	O	O	O	O	O	O
M-8										S	S	S
M-10	O	O	O	O	O	O	O	O	O	O	O	O
M-15	O	O	O	O	O	O	O	O	O	O	O	O
M-20	O	O	O	O	O	O	O	O	O			
M-15R	O	O	O	O	O	O	O	O	O			
M-20R	O	O	O	O	O	O	O	O	O			
CM-20	O	O	O	O	O	O	O	O	O			
Raising Fixture												
TRX-80	O	O				O	O			O	O	O
TRX-80HD			O	O	O			O	O			
Service Platform												
HDP			O	O	O			O	O			
Coax Standoff Arms												
CX-2	O					O						
CX-3		O					O					
CX-4			O	O				O		O	O	
CX-5					O				O			O
CX-6								O				
Motor Drives												
MD-75	O	O				O	O			O	O	O
MDP-750		O	O	S			O				O	O
MDPL-1000			O		S			S				
Remote Control												
RMC-1000		O	O	O	O		O	O	O		O	O
MCL-100		O	O	R	S		O	S	S		O	O
Miscellaneous												
3/4" X 27 bolts	S											
1" X 27" bolts		S			S	S	S					
1-1/8" X 27" bolts			S	S			S		S			
RP-3										S	S	
RP-4	S	S	S	S	S						S	
RP-5						S	S	S	S			
MRP	O	O	O	O	O	O	O	O	O		O	
TB-2US	O	O	O	O	O	O	O	O	O		O	
IV-16	O	O	O	O	O	O	O	O	O	O	O	O

WEATHER STATIONS

Weather Stations



Ultimeter 2100
HRO Price \$399.95

*Tracking more than 100
weather values*

The Ultimeter 2100 features a stunning platinum-tone housing with brilliant blue display backlighting. To enhance the user interface still further, an illuminated keypad provides exceptional visibility in darkness or low-light conditions. The unit utilizes Peet Bros. patented and proven weather sensor technology, including a unique all-digital wind sensor. Its microprocessor is 8 times faster and has 4 times the memory of their earlier weather stations. Major features include:

- Barometric pressure and numeric pressure change over a 3 hour period plus preset barometric Storm Alert, Wind Speed, Wind Direction, Outdoor Temperature, Indoor Temperature, Wind Chill, Time, Date and (with optional sensors) Indoor Humidity, Dew Point and Rainfall.
- Two versatile 4-mode serial ports can accept remote commands, making it easy to communicate with external devices to transmit data or collect it remotely by phone, modem, or radio link. The 5 minute packet mode is perfect for economical radio "beacon" transmission. The 2100 comes "APRS-Ready," requiring only direct cable connection to a TNC (cable not provided).
- The second serial data port is in the 2100's sensor junction box, delivering greater flexibility in the location and connection of the Weather Picture, PC Weather Data Logger or other peripheral weather accessory.
- An exclusive Triple-Bank Memory System stores highest and lowest readings – today's, yesterday's and long term – and the date and time that every high and low occurred.
- Each long term high and low can be reset individually or you can use a Master Reset to clear all long term memories simultaneously.
- The system includes built-in static electricity discharge protection for all outdoor sensors. Also includes a 3 prong grounded AC adapter.
- Features a unique Rain Rate Alarm serving as a flash flood alert. It is compatible with all of our optional rain gauge models.
- The 2100 has a full array of adjustable alarms and an optional electrical external alarm output. A predictive battery test circuit warns when the battery is getting weak.
- Optional sensors include humidity sensors and rain gauges.

WeatherText™ Special

WeatherText™ is an RS-232 serial data output mode in which the instrument puts out one human-readable text Weather Report each minute. Viewable on a PC monitor using terminal software such as HyperTerminal or may be transmitted as a data packet. For a limited time every 800/2100 Ultimeter Weather Station purchased will include the WeatherText™ Tools Data Logger key, including software and PC interface cable. \$69 retail value

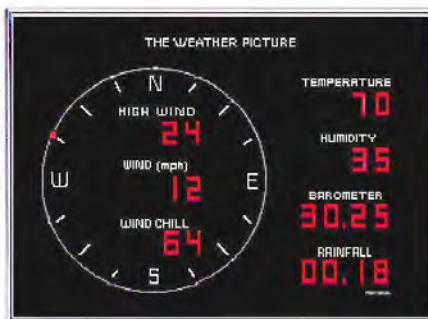


Ultimeter 800
HRO Price \$279.95

The Ultimeter 800 has nearly all the features of the Ultimeter 2100 except the barometer. It has wind speed, wind direction, outdoor temperature, indoor temperature, wind chill temperature, time, date, automatic leap year adjustment and automatic scan mode as standard functions. With optional sensors, rain, outdoor humidity, indoor humidity and dew point reading are available. It automatically stores today's and yesterday's highs, lows and total rain fall. It also stores long term highs and lows. Alarms are provided for high wind, high and low outdoor temperature, high and low indoor temperature. The serial port has three output modes.

Ultimeter 100
HRO Price \$199.95

The Ultimeter 100 automatically stores today's and yesterday's highs, lows and total rainfall so you can compare the readings. Also stores long term high, low and rain information since it was last reset. Has a 3-mode serial port for interfacing telephone, modem or radio reporting.



Weather Picture
HRO Price \$389.95
(aluminum version)

The Weather Picture receives data from an Ultimeter and continuously displays your pre-selected data. The 8 inch compass rose and big 0.8 inch illuminated red numerals are clearly visible day or night. View even from across the room.

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24 Hour "On-Line" Ordering is now available on the INTERNET! URL is <http://www.hamradio.com>

Shipments are made from any of our 12 locations that has the particular items you need in stock. In most cases, the shipment will be made from the location nearest you (if stock is available). HRO is trying to provide the quickest shipments in the industry using these methods.

California customers can now order using toll-free numbers to speak to their California store of choice.

Sales Tax

State and local laws require us to collect and remit State sales / use tax on orders shipped from any of our 12 locations INTO Arizona, California, Colorado, Georgia, or Virginia.

You will find that this small extra charge will be more than overcome by the convenience of the largest ham radio inventories in the United States. You will also find courteous and knowledgeable salespeople to assist you. We think you will find HRO to be the company you want backing you when it comes to dealing with any problems you might have with manufacturers or shipping companies.

Phone Orders

To place a phone order using a credit card, please have the following information available if you are a first-time caller or have not made a recent purchase from HRO.

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Payment

We accept Visa, MasterCard, American Express, and Discover Card. Personal checks are also accepted; however, processing time will delay shipment by some 10 days.

When using a credit card, please have the card in front of you since we will need all the information, including the name of the issuing bank. If the card holder's BILLING address differs from the shipping address, please be sure to specify both addresses and telephone numbers. For your protection, we thoroughly investigate the validity of all credit card purchases.

COD Orders

COD payments must be made by cashiers check or money order at the time of delivery. There is a small fee for COD shipments.

Commercial Sales Purchase Orders

Written purchase orders will be accepted from city, state, and federal agencies, and, with prior approval of credit, from commercial organizations. HRO quotes, in most cases, prices that require payment on receipt of merchandise. You may find a surcharge for credit terms applied to your pricing. Please indicate that you require terms when calling for price quotes.

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Free UPS Ground Transportation in the continental US on most items over \$100.

All Alaska and Hawaii shipments can now be shipped by UPS Ground as well as by Blue Label (2nd Day Air) or Red Label (Overnight) or USPS. Please ask for charges.

In a Hurry? If necessary to expedite shipments, UPS has Red Label (overnight), Blue Label (2nd-day) and Orange Label (3 day) services available at an extra cost. Please request charges for these services.

Foreign Deliveries: We ship world-wide. Contact our stores, by fax or email, with your needs. We can give you quotes and details for placing your foreign order. Payment methods include wire transfer direct to our bank as well as payment by VISA/ MC charge cards or check drawn in U.S. Funds from a U.S. Bank. Shipments are made (depending on size) by UPS, FED EX, DHL, or international air mail. Some orders to some foreign countries cannot be insured to the full value.

Truck Delivery: On day of delivery by truck, please be sure to have enough help, and / or proper equipment on hand for unloading merchandise. Truck drivers are NOT required to provide assistance. If you are not experienced at handling large, awkward items such as towers, antennas or amplifiers, please ask properly trained people to assist you.

Canadian Orders can now be shipped via UPS. These costs will be added to your invoice.

Damaged Items

UPS If the item is obviously damaged, note this with the driver and refuse shipment. This item will be returned to HRO and another will be sent at no additional charge. If hidden damage is noted, contact UPS as soon as possible. They will arrange pickup. Once the item is received by HRO, a replacement will be sent.

TRUCK If there is damage or the shipment is short, it is the customer's responsibility to file the claim with the trucking company. At the time of receipt of item, it is recommended that you have the driver write "damaged" or indicate shortage on the bill of lading he gives to you. Be sure to have the same notation as well as drivers signature on his copy also.

MAIL It is the customer's responsibility to file all loss or damage claims with the postal department.

Prices

Many prices shown are suggested list price. In most cases we offer large discounts. Equipment manufacturers constantly change prices, offer specials or react to the Dollar / Yen exchange rates. Simply call one of our 800 numbers and our staff will be happy to quote you the current selling price of the item you are interested in. Prices are subject to change without notice or obligation to the customer. Sorry, we cannot honor typos in this catalog.

Software

Software is sold on a non-returnable basis. Any software problems will be resolved under the terms of the manufacturer's warranty.

Lost Items

When your order is delivered, please carefully count items and if anything is missing, notify HRO at once.

Occasionally, cartons shipped at the same time will arrive at their destination two or three days apart.

If you notify HRO within 10 days, we will replace lost or damaged items after completion of proper documentation and acceptance by the shipping agency.

New Equipment Returns

Products are not sold for evaluation. Under some circumstances (at the discretion of HRO) and with prior approval of the store of purchase, HRO will accept an item for return. Under most circumstances a 15% restocking fee and all freight charges will be assessed.

Your means of refund for returns will be the same as that used for your original payment except for cash, which will be refunded by check. HRO will pay from its corporate offices. It can take up to two weeks.

Defective merchandise may be returned within 10 days of the original purchase for exchange. Original receipt must accompany the return. Contact your salesman for details.

Manufacturer's New Equipment Warranties

Ham Radio Outlet supports all manufacturer's warranties. Actual warranty terms are included within the shipping container of most items. If needed, you may request from any of our locations a free copy of the manufacturer's written terms for any warranted product. Please request by model number and indicate the page in this catalog that represents the product.

Ham Radio Outlet will in many cases provide in-store repairs; please contact the store of purchase for information. It will be necessary to provide us with the invoice number and purchase date, as most manufacturers need this information to process under their FREE warranty repair terms.

New Equipment Warranty Returns

When returning equipment for repair, please pack the item in original packing material or something similar to provide adequate protection during the shipping process. Note on box: "ATTENTION SERVICE." Include a copy of your purchase invoice, and a complete and detailed description of the problems. Without the invoice or a complete description, delays will be experienced in providing the proper service and returning the item to you. Be sure to insure the package for its replacement cost.

HRO will repair or replace the defective item at our option. If the item is found to be defective under the terms of the manufacturer's warranty, no charge will be made for service or return shipping within continental USA. It is the customer's responsibility to ship all defective items to the service center for warranty repair.

HRO Extended Warranty

HRO now offers an optional Extended Warranty Program for most Amateur Radios, which must be purchased within 30 days of the purchase of the related product. The Extended Warranty Program starts at the conclusion of the new product original warranty period, and must be processed by HRO directly via any of our 12 stores. The Extended Warranty Program can be purchased for one (1) or two (2) additional years, does not apply to accessory items, and is available to the original purchaser only and not transferable. See page 27 for details.

Problems

HRO prides itself in its ability to service the customer. If there is a problem please contact the manager of the store from which you purchased the merchandise. If for some reason your problem cannot be remedied by that store manager, please feel free to call Ham Radio Outlet Corporate Headquarters at (925) 831-1771 and explain the situation. At this point our national sales staff will see that your problem is addressed.

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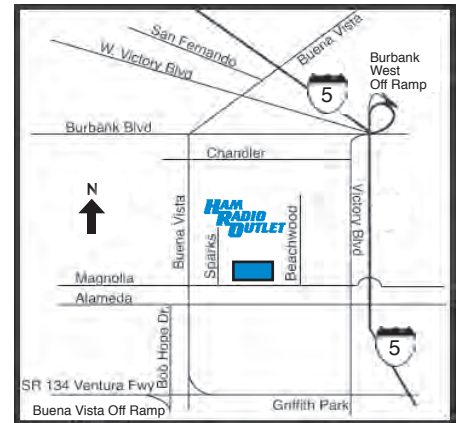


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FT DX 5000



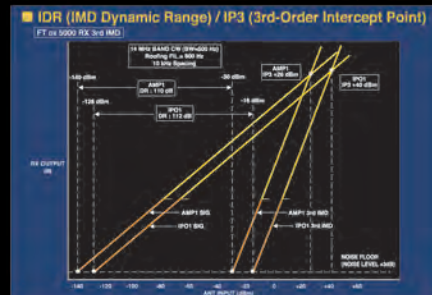
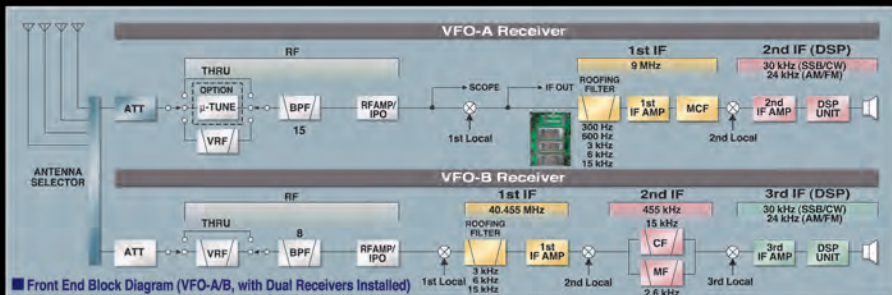
Two Totally Independent Receivers - The VFO-A/Main Receiver utilizes Super Sharp Roofing filters to give you the highest performance and best flexibility

The tight shape factor 6 pole crystal filters and D Quad Double Balanced Mixer design afford incredible improvement in 3rd - Order dynamic range and IP3 performance



Superb 3rd-Order Dynamic Range and 3rd-Order Intercept Point (IP3)

You will be pleased with the astounding 112 dB dynamic range and superb IP3 + 40 dBm at 10 kHz separation (CW/500 Hz BW). Experience the unmatched close-in dynamic range of 105 dB, IP3 +36 dBm at 2 kHz separation (CW/500 Hz BW)! (VFO-A/Main Receiver, 14 MHz, IPO-1)



**HF/50 MHz 200 W Transceiver
FT DX 5000MP**

Station Monitor SM-5000 included
± 0.05ppm OCXO included
300 Hz Roofing Filter included

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With Built-in Automatic Antenna Tuner

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- The IF DSP guarantees quiet and enjoyable high performance HF/50 MHz operation

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■ The rugged FT-450D aluminum die-cast chassis, with its quiet, thermostatically controlled cooling fan provides a solid foundation for the power amplifier during long hours of field or home contesting use.



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